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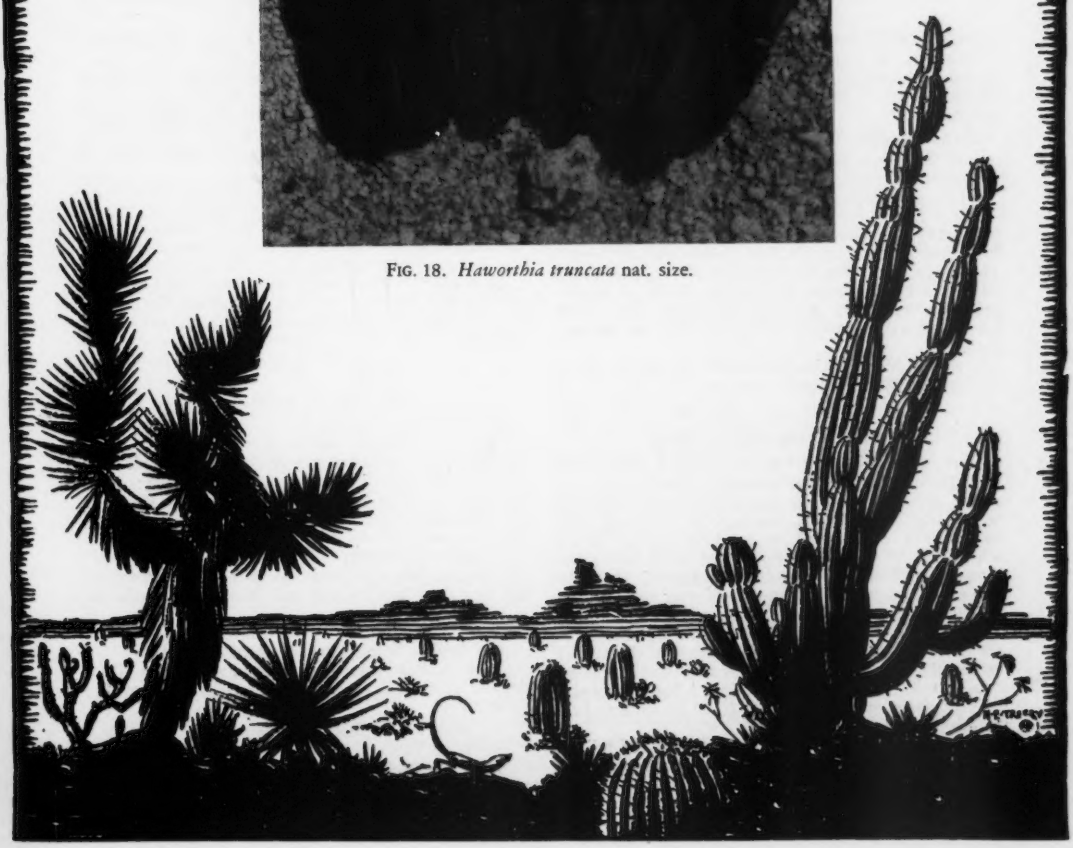
CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

Vol. XXVII MARCH-APRIL, 1955 No. 2

FIG. 18. *Haworthia truncata* nat. size.



CACTUS AND SUCCULENT JOURNAL

Published and owned by the Cactus and Succulent Society of America, Inc., 132 W. Union St., Pasadena, Calif. A magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. North and South America $3.00 per year; foreign $3.50 by money order. Mail application to SCOTT HASELTON, Editor, 132 West Union Street, Pasadena 1, California. *Editorial Staff:* THE ENTIRE SOCIETY. Entered as second Class Matter at Pasadena, Calif., under act of March 3, 1879. Published bi-monthly. We reserve the right to accept or reject advertising or articles sent to this JOURNAL.

Vol. XXVII MARCH-APRIL, 1955 (Price 50c) No. 2

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NEW MEXICO CACTUS AND SUCCULENT SOCIETY

The New Mexico Cactus and Succulent Society was organized November 6, 1954. Officers were duly elected by the sixteen persons present. The officers elected are:

President, Mrs. Viola Blake, Albuquerque.
Vice President, Mr. Charles H. Comfort, Santa Fe.
Secretary-Treasurer, Mr. Prince Pierce, Albuquerque.

The second formal meeting of our society was held January 20, 1955. At this time, dues were decided upon in the amount of one dollar per family of husband and wife, or one person. At that meeting twelve persons paid dues for themselves or their families. We have thirty-six persons who are or wish to be enrolled in our society as charter members. We are extending our wish to be affiliated with the national society.

New Mexico Cactus & Succulent Society
PRINCE PIERCE

FROM THE PRESIDENT'S DESK

The time of the year has now arrived when there is little to report to you in the way of progress or plans. The plans for the Convention in El Paso are well advanced and soon you will be receiving your Information Sheets and Reservation Blanks which should be filled out promptly and returned to the Convention Treasurer as quickly as possible to facilitate arrangements for taking care of your reservations.

One advance which has been made since you last heard from me, is the completion of arrangements for the borrowing of books from the Library of the Cactus & Succulent Society of America by any member of the Society who lives within the United States. All details of these arrangements are given in another part of this JOURNAL.

Plans are now being made for an illustrated talk to be given early this spring and a visit is being planned to one of the interesting botanical collection in southern California.

Make plans for having delegates present in El Paso to represent your Affiliate and to present their views at the delegate meetings. Also, all individuals intending to attend, should be making their plans to be present and to take part in all of the many phases of the Convention.

In this JOURNAL you will also find an interesting account of the area to which the second field trip of the Convention will be made. I doubt if any member can fail to be interested in making these field trips and finding new plants for their collection.

Let's all expend a little energy and make this the greatest and the best attended Convention the Society has ever held. We will be expecting all of you in El Paso.

HOMER RUSH, *President.*

NOTICE TO AFFILIATES

The Cactus and Succulent Society of America, Inc., is happy to announce that we have a new set of slides to offer you for program material. Do not let the title confuse you. Except for only a few, these slides have never before been included in any of the slide sets. The slide sets available now are as follows:

Set No. 1—Cactus and other succulents Native to California (new set).
Set No. 2—Baja California, Mexico and So. America.
Set No. 3—Orchid Cacti and Miscellaneous Succulents and Cactus.
Set No. 4—Orchid Cactus—Donated by S. E. Beahm of Beahm Epiphyllum Gardens.

Slides will be loaned upon my receipt of a $5.00 deposit which will be returned after the return of the slides to me.

MRS. MARY GLADE, *Corresponding Secretary*
7600 Verdugo Crestline Dr.
Tujunga, California.

Notes on Haworthias

J. R. BROWN

Haworthia truncata Schönl. apud Marl. in Ber. Deutsch Bot. Ges. XXVII (1909) 367, figs. 6 & 7; Schönl. in Trans. Roy. Soc. So. Afr. I pt. 2 (1910) 391, Pl. XXVI; Barker in Journ. Bot. Soc. So. Afr. (1929) Pl. III c; Poelln. in Rep. Sp. Nov. XXX (1932) 87 & 90, in Rep. Sp. Nov. XLI (1937) 214, in Rep. Sp. Nov. XLIV (1938) 237; J. R. Brown in Cact. & Succ. Journ. Amer. IX (1937) 86, fig., in Desert Plt. Life XV (1943) 151 fig., in Cact. & Succ. Journ. Amer. XVI (1944) 86 fig. 88; Uitewaal in Cact. & Vetpl. V (1939) 3 fig.; Dyer in So. Afr. Journ. Scien. XXXIII (1937) 335 figs.

The association of Marloth with the name of *Haworthia truncata* arises because both Schönland and Marloth named and described this plant about the same time; Schönland's paper was submitted to the Roy. Soc. So. Afr. prior to Marloth's paper, upon knowing this Marloth withdrew his name and description but retained Schönland's name of *Haw. truncata* when he published his paper on "Window Plants" in the German periodical cited above. This publication of the name preceded the publication of Schönland's paper in So. Africa.

Haworthia truncata was described and named by S. Schönland in a paper entitled, "On some points in the morphology and biology of a new species of Haworthia" read before the Royal Soc. So. Afr. in June, 1909, and subsequently published in the Society's Transactions vol. I, pt. 2 (1910) 391, Pl. XXVI.

Haworthia truncata is a remarkable little plant, as not only are the tops of the leaves abruptly truncate, but they are arranged in a bifarious or fan shaped manner, closely appressed and with the tops of the leaves more or less even so that the entire plant shows a more or less truncated top. In addition to this is the very pronounced hypogean mode of life, only equalled by some of the *Haworthias* of the sect. *Limpidae* and the sect. *Retusae*. These plants have what are known as contractile roots which keep the plant withdrawn in the soil until, in the case of *Haworthia truncata*, only the tuberculate leaf tips are visible. Schönland aptly remarks that these *Haworthias* can be termed physiological shade plants, as thus withdrawn in the soil the effects of strong sunlight and transpiration are greatly lessened.

In cultivation, where the plants are grown in small pots, the contractile roots cannot function very well as the roots become bent or curled around in the pot, but where a container of sufficient depth is used or where planted in the ground, their more or less underground way of life is readily observed. Probably the fleshy roots may also serve as storage roots against the time of drought. A plant of *Haworthia truncata* forma *tenuis* (forma *tenuior* per err.) showing the root system was illustrated in this Journal, XVI (1944) 87.

In his paper (loc. cit.) Schönland describes *Haworthia truncata* as follows:

Roots, elongated, fleshy.

Stem, very short, fleshy.

Leaves, 2-5, distichous, 2-3 cm. long, ca. 17 mm. broad, fleshy, flattened, ovate-deltoid, truncate, suberect, lightly incurved, the face of the somewhat oblong tip constricted in the middle and rugose with minute tubercles; face of leaf towards the tip convex, channeled lengthwise and rugose with minute tubercles, lower sheathing part of leaf face smooth, concave, the margins with minute ciliate teeth; back of leaf convex, lightly channeled lengthwise and rugose with minute tubercles in the upper part.

Peduncle erect, slender, simple, with sterile bracts from the base, ca. 20-25 cm. tall including the raceme. Bracts ovate-acuminate, 4-5 mm. long, pedicels almost equal. Perianth ca. 10 mm. long, white obscurely lined, tube somewhat obclavate, segments bilabiate. Style one third the length of ovary. Capsule oblong, 3 angled, 8 mm. long, seeds 3 mm. long more or less irregularly 3 angled.

On a farm 7 miles from Oudtshoorn.

Discovered by Miss L. Britten. April, 1909.

As the figure of this *Haworthia* is not readily available a photographic reproduction of it is shown here with the description.

Description of Plate XXVI, *Haworthia truncata* Schönl.: Fig. 1. Whole plant (natural size). Fig. 2. Dorsal view of leaf with tops of roots and base of peduncle (natural size). Fig. 3. Median longitudinal section of leaves and stem. The thick black lines in the leaves indicate the extent of the assimilating tissue (natural size). Fig. 4. Two stamens and portion of the corolla (ca. x 3). Fig. 5. Gynaecium, etc. (ca. x 3). Fig. 6. Young capsule, with corolla still attached (natural size). Fig. 7. Ripe open capsule (natural size).

Subsequently through the years forms of *Haw. truncata* were found which varied considerably and von Poellnitz in1938 segregated 3 forms

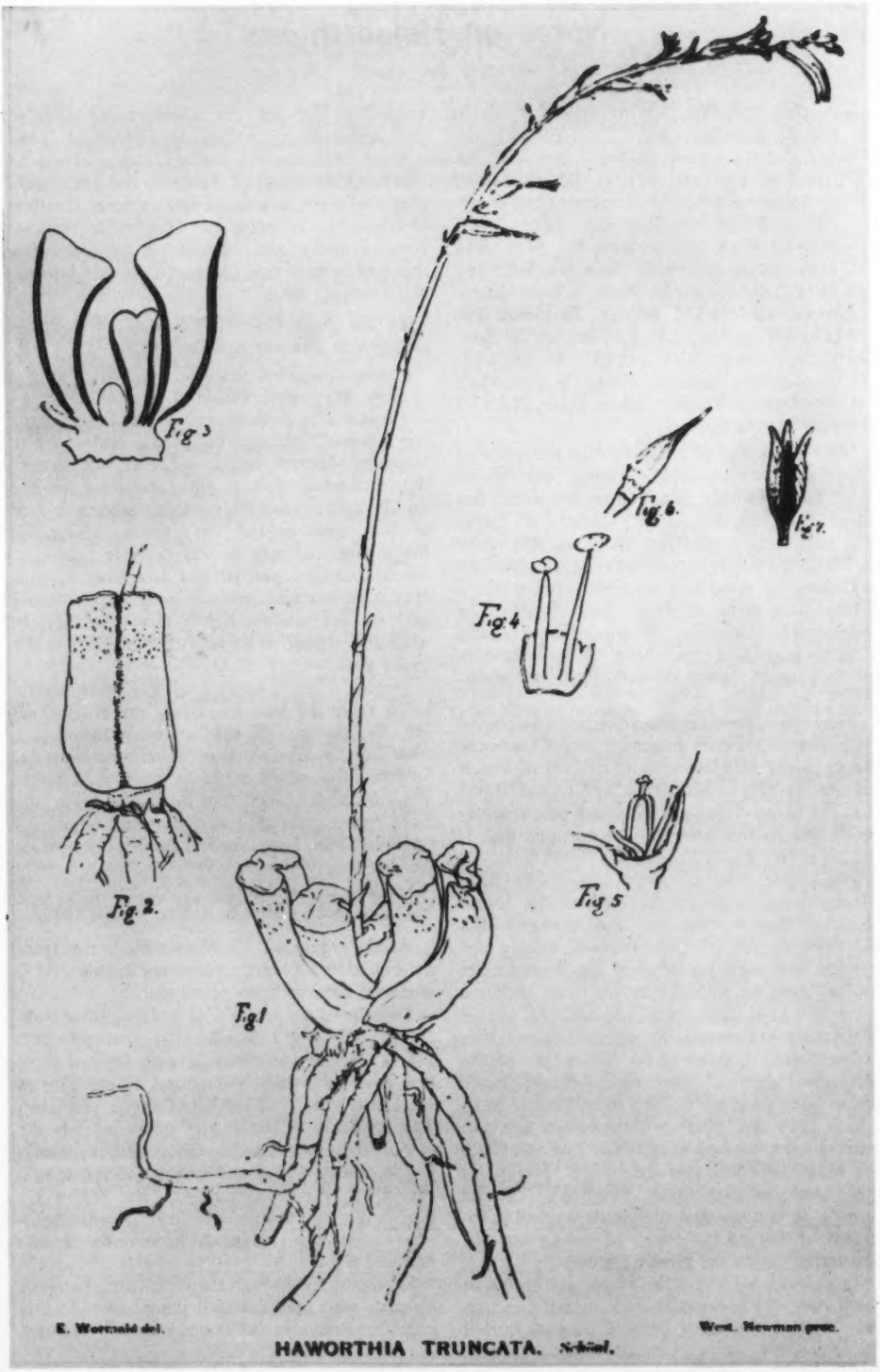


Fig 3
Fig 6.
Fig 7.
Fig 4
Fig 2.
Fig 5
Fig 1
E. Wormald del.
HAWORTHIA TRUNCATA. Natural.
West, Newman grav.

FIG. 19

which he named forma *normalis*, forma *tenuis*, and forma *crassa*. These were briefly described as follows: forma *normalis*. Truncate apex of the leaf 6-8 mm. thick. Oudtshoorn and Ladismith. forma *tenus*. Truncate apex of the leaf only 3-4 mm. thick. Oudtshoorn. forma *crassa*. Truncate apex of the leaf 9-11 mm. thick. Calitzdorp.

Some 15 years ago plants of *Haworthia truncata* were received which were collected by Mrs. S. Blackburn (after whom *Haw. Blackburniae* Barker is named). The top fig. of plate 1 shows a plant collected 8 miles from Oudtshoorn, "growing on the flats among bushes in stony soil." Two of the plants received in this collection from the same locality are very large forms and one of them is shown in the bottom fig. of plate 1. The plant shown in the center of plate 1 is forma *tenuis* which was received as from Ladismith, but without definite data, the plant shown has been growing here for over 20 years. The top fig. in plate 2 shows plants of forma *crassa* before any change in their character due to cultivation has taken place. This form was also collected by Mrs. Blackburn 8 miles S. W. of Calitzdorp, "on the slopes of a hill in stony ground." A very interesting note is that *Haw. Blackburniae* grows on this same hill, plants of very divergent habit. This latter plant forming large clumps in the open and adapting itself to summer drought by shortening its long grassy-like leaves by withering the upper part. *Haw. truncata* forma *crassa*, on the other hand, is deeply imbedded in the soil for protection.

The center fig. of plate 2 shows a plant of forma *crassa* after many years in cultivation and this form seems more easily affected by conditions under cultivation and may assume this obese size.

In studying Schönland's plate of *Haw. truncata* the impression was that the plant figured was identical with the plant now known as forma *crassa*. The few leaves (2-5), the breadth of the leaves (17 mm.), and the thickness of the leaves as shown in the figure (8-10 mm.); this agrees very well with the characters of *Haw. truncata* forma *crassa* and for this reason a plant of this form was illustrated under the name of *Haw. truncata* Schönl. in this Journ. (1944). However, *Haw. truncata* forma *crassa* does not seem to occur near Oudtshoorn. The illustration shown in 1944 is again reproduced here under the name, forma *crassa* (top fig. plate 2). It is quite distinct from other forms by the lesser number of leaves, never exceeding 7 (in cultivation in So. Calif.), and the greater thickness of the leaves in proportion to the breadth (15-20 mm. broad, 9-12 mm. thick). It is also a somewhat smoother plant, i.e. the tubercles are not so prominent below the truncate top.

The form known as forma *normalis* seems to be regarded as the plant described by Schönland. This form may have to 13 leaves (in cultivation), 5-8 mm. thick, to 25 mm. broad. When in healthy growth the windowed tops of the leaves may be very shining and glassy-like.

The very large form* previously mentioned is well shown in the photograph and little more will be said of it at this time except that it retains this large size when propagated from leaves.

The smallest form shown, forma *tenuis*, seems to be the most tuberculate form, the slowest growing, and probably the most stable. The leaves may number as many as in forma *normalis* and are to 2 cm. broad, 3-5 mm. thick; the plant shown in the illustration of this form illustrates the more or less crescent shape which is assumed by this form when very old. While this form is described as having leaves 3-4 mm. thick, the writer has never seen a mature plant which had all of its leaves so thin. This form is also illustrated in Desert Plt. Life (loc. cit.).

Flowers: A plant of forma *normalis* is shown to illustrate the flowering habit which is similar in all forms. Flowers of the 3 forms are shown, b. flowers of forma *normalis*; c. forma *tenuis*; d. forma *crassa*.

A condensation of the many inflorescences of the three forms examined is given below.

Peduncle, simple, slender to somewhat stout, 1-2 mm. diam., 25 cm. or more in length, including raceme (shorter in the case of forma *crassa*).

Sterile bracts 15-20, many towards base of peduncle, 3-6 mm. long, deltoid-acuminate with a brown keel.

Pedicels 4-5.5 mm. long, becoming shorter above, (subsessile in the case of forma *crassa*); bracts more or less the same length as the pedicels, deltoid-acuminate with a brown keel.

Perianth, 13-16 mm. long, tube obclavate, subtrigonus, ca. 4 mm. diam. at broadest part, creamy-white with green lines; the lower segments more recurved than the upper 3, outer segments white with brownish-green lines, inner segments white with green lines; segments more or less rose tinged in the upper part.

The shorter peduncles and subsessile flowers of forma *crassa* are more or less similar in *Haw. maughanii*, a close relative.

R. A. Dyer (loc. cit.) mentions the occurrence of vivipary in *Haw. truncata*. While this may be of rare occurrence in *Haworthia* in the natural state, it is of very frequent occurrence in cultivation and has been noticed in nearly all species.

*The color photo on front cover also shows a plant of the large unnamed form of *Haworthia truncata*.

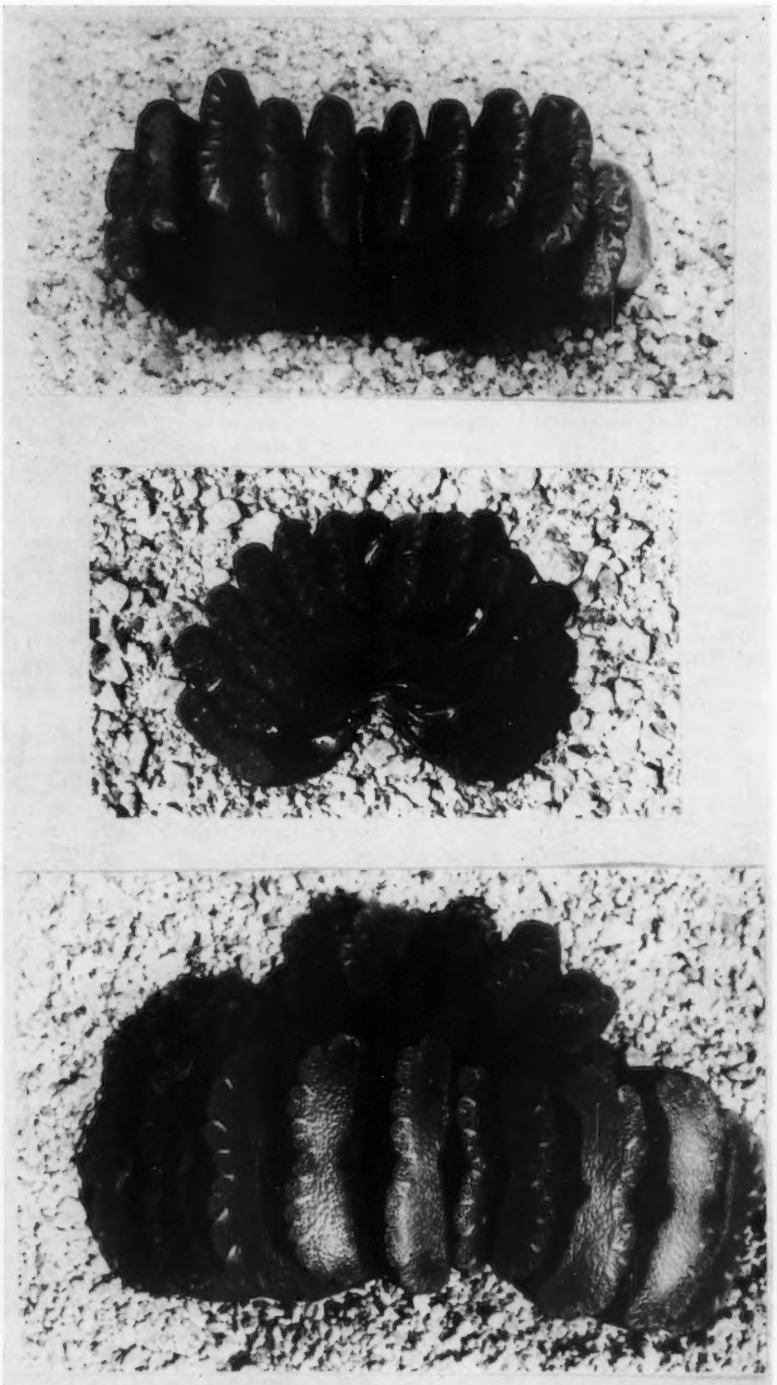


FIG. 20
PLATE 1. *Top: Haworthia truncata* forma *normalis* Poelln. *Center: Haworthia truncata* forma *tenuis* Poelln. *Bottom: Haworthia truncata,* unnamed form. All nat. size

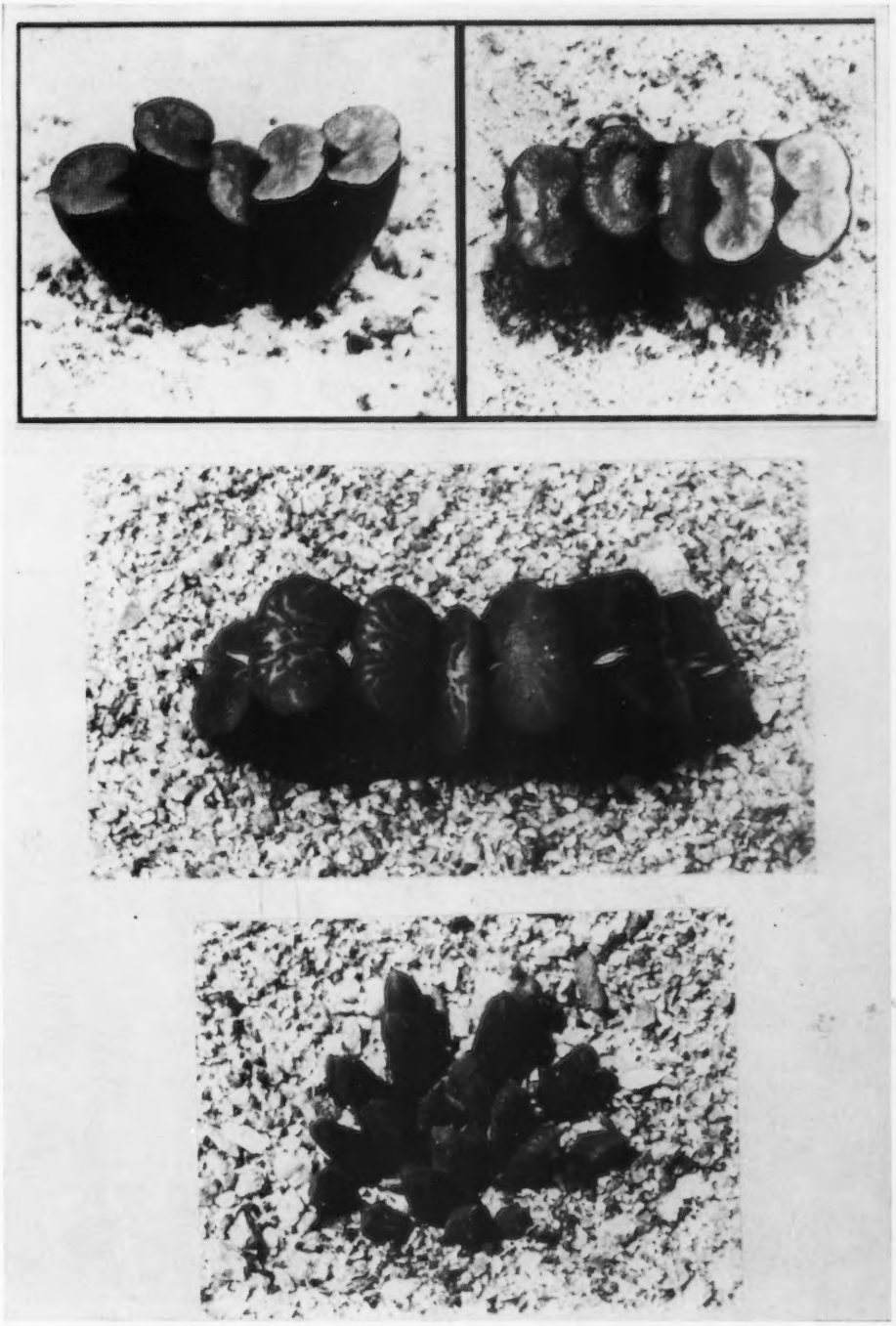
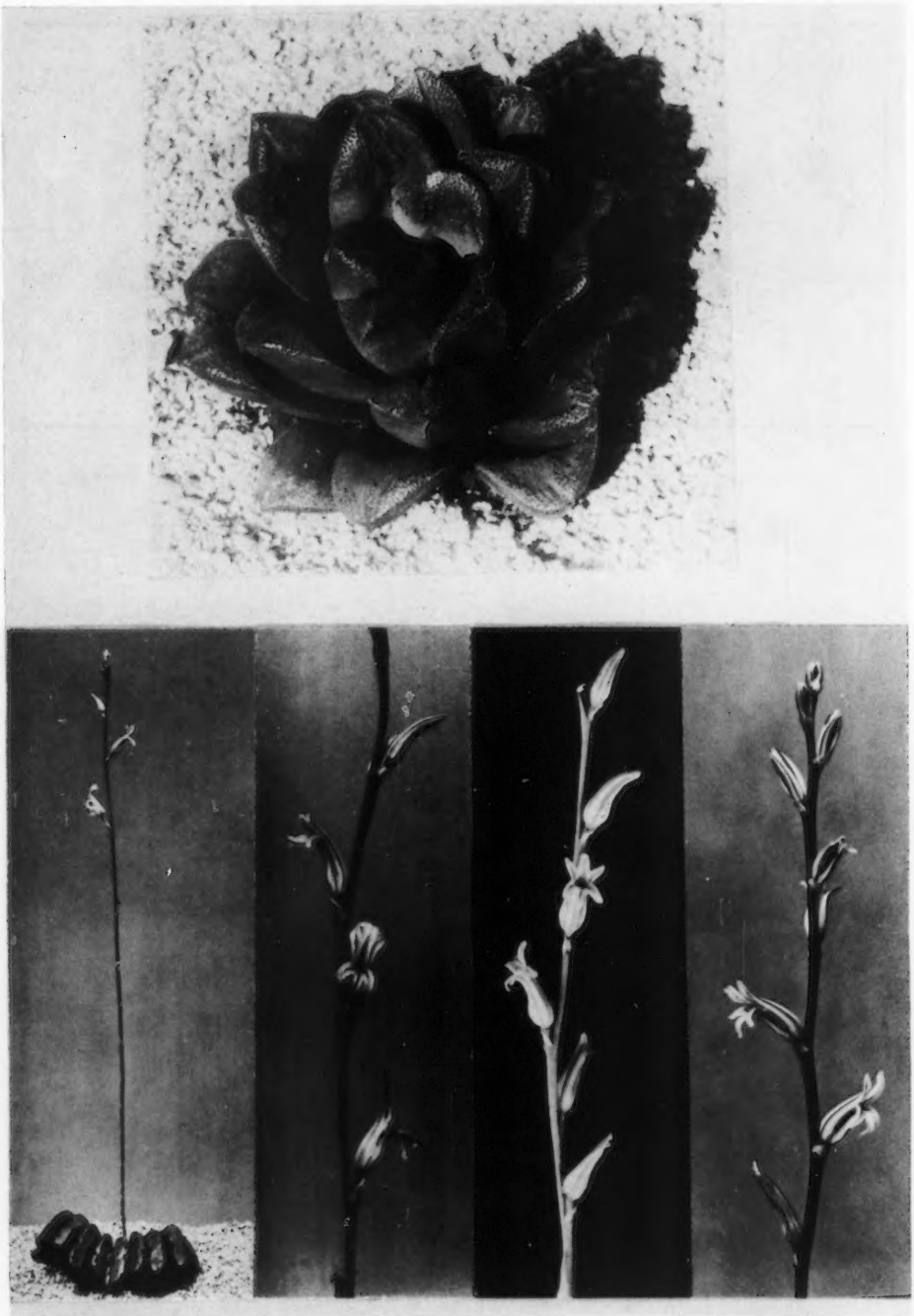


FIG. 21

PLATE 2. *Top: Haworthia truncata* forma *crassa* Poelln. *Center: Haworthia truncata* forma *crassa* Poelln., a cultivated plant. *Bottom: Haworthia truncata* x *Haworthia setata.* All nat. size.



(a) (b) (c) (d)

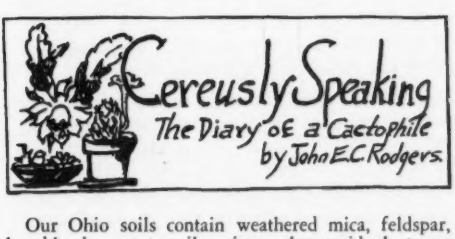
FIG. 22

PLATE 3. *Top: Haworthia truncata* x *Haworthia retusa.* Nat. size. *Below* a. *Haworthia truncata* forma *normalis* Poelln. plant in flower. Approx. x 0.33. b. *Haworthia truncata* forma *normalis* Poelln. c. *Haworthia truncata* forma *tenuis* Poelln. d. *Haworthia truncata* forma *crassa* Poelln. Flowers in b., c. and d. all nat. size.

It may be said that there is considerable doubt in the mind of the writer regarding *Haw truncata* forma *normalis* as being the plant which Schönland described. The exact locality of *Haw. truncata* forma *tenuis* needs to be clarified. The form or forms which occur in the vicinity of Ladismith would also seem to need investigation, as von Poelnitz gives both Oudtshoorn and Ladismith as localities for forma *normalis,* localities which are widely separated.

Haw. truncata and its forms are easily grown and present no special problems. They are also very easily propagated from leaves. In the natural state, *Haworthias* having this more or less hypogean habit are simple plants, but in cultivation *Haw. truncata* may offset very freely when grown under glass and no doubt a very prolific strain may be established, as rather amazing results have been seen in one of the commercial gardens of So. California.

A plant with the outstanding appearance of *Haw. truncata* quickly took the fancy of those who are given to hybridizing and there are now numerous hybrid forms. One of the most commonly seen closely resembles the plant shown at top of plate 3. This particular plant is a hybrid between *Haw. truncata* and *Haw. retusa.* One other rather different hybrid is shown, a cross between *Haw. truncata* and *Haw. setata.* It is interesting because of the somewhat close resemblance of its pointed leaf tips to those of the very young leaves of seedling plants of *Haw. truncata,* which only begin to show the truncate shape about the third leaf. This can also be noticed in the youngest leaves of offsets. In all the hybrids which have been seen the tubercles of *Haw. truncata* are very pronounced.



Our Ohio soils contain weathered mica, feldspar, hornblende, quartz, silca, iron, clay residual, traces of manganese as well as ten or more other trace elements such as phosphorus, boron, zinc, magnesium, aluminum, etc., which may or may not be of advantage to my plants. Some of my *"skeletons"* may be due to one of these rarer elements or it may be due to the lack of it. Most fertilizers have been tested for common as well as rare elements on actual plants. The results can be found in U. S. Department of Agricultural Technical Bulletin No. 340 using tobacco plants as a control or *"How to Enjoy Gardening Success"* published by Swift and Company. A second book "The Gardener's Reference Guide" by the same author and company is available. I use both of these.

Louis Bromfield claims that we may have exhausted the soil a foot or so down but we can restore this same surface soil by planting deep rooted plants to bring up the deep down soil elements and then plowing in and working up the soil thus made. He has proved it at his famous testing farm at Lucas, Ohio.

Water soluable minerals spells success or failure with any plant whether cactus, succulent or not. Our leading universities have carried on experiments with the basic eleven chemicals: sulphur, iron, nitrogen, manganese, magnesium, calcium, phosphorus, potassium, boron, zinc and copper. Dark green stems and leaves show a good supply of iron in the chlorophyll. Boron makes the spines bright and colorful in Southwest cacti. Some soils contains minerals injurious to plants, but not many are found in the soils we use. Trace elements over and above the basic eleven help plants to absorb food, promote root growth, repel insects, make and store up starch and sugar. This story and its resulting benefits to you can be obtained from our state agricultural stations, etc., as well as the national government. At present most soils contain these trace elements but we all know how iodine has been leached from the soils until the *"Goitre belt"* was a common name for iodine starved districts. Iodized salt removed this deficiency.

There is no way to tell what your plants lack in most instances but a slow growing plant responds to new soils containing calcium, iron and maganese; most native soils contain these in more or less suitable quantities. Fertilizers can be used providing the directions are followed. There are *"fillers"* in all granulated types to keep from "burning" your plants. However, most people use too much liquid fertilizers because they have been used to dry types and the amount of the liquid looks too small and so they use more and burn the plants. We have results both for and against fertilizers for cactus and succulents.

I always regret the coming of cold weather because the *Opuntia compressa* and its varieties are perfect at this time of year. The fruits are not ripe but they are turning red. As soon as cold weather approaches the pads shrivel to condense the sap and thus create their own anti-freeze. I have them in three different beds of soil: sandy loam, coal-ash loam, and rich flower border soils. They all look fine. A natural hybrid between *O. compressa* and *O. dillenii* of Florida has survived three of our winters here. It resembles the *O compressa* side of the cross. I kept it dry in the greenhouse for the first winter, on the back porch and dry the 2nd winter and in the open for the last three years. It takes it outside. It grows slowly which is not like other of its parents. The pads are larger and more spiny.

The Euphorbias have grown so much this year I'm getting worried. I do not have enough head-room above the benches. So far the space has been adequate. The Stapelias and Huernias are through blooming but there are no long pods developing on any of them. Evidently it is not the flies that pollinate them as there were plenty of flies, maggots, etc., on them. *Stapelia nobilis* and *S. gigantea* were both in the greenhouse when they bloomed. The others were outside. I've grown several *S. grandiflora* seedlings to blooming stage.

My wintering water schedule will have its third test this year to prove one of my pet theories—that plants kept cool in a dry greenhouse need water at regular times more than any other time.

I also have my notes on the use of combined sprays, fertilizer applications, changes of soil and several other things to report.

JOHN E. C. RODGERS
1229—8th Street, Lorain, Ohio

QUESTIONS and ANSWERS

Conducted by
HARRY JOHNSON
Paramount, Calif.

Question: How do you keep each species true? Don't the bees or other insects cross pollinate them or do you hand pollinate each species?

Answer: Many species do not become cross pollinated, others are very prone to hybridization. The great danger is to make sure your stock plants are true species and not hybrids. Where possible we have used for stock collected plants or collected seed. Some of our seed plants are 20 or 30 years old from original importations of the species. However, many species are from European collections which have not been recollected for perhaps a hundred years. There is no way to know their actual history or whether they are really the exact plant they are supposed to be. In recent years many old species have been recollected and all workers in our particular field of taxonomy are doing their best to straighten out older mistakes. Many times the descriptions of plants are very faulty, so much so that the plant cannot be pinned down. At the time they were described there were not too many known cacti so the descriptions were loose sometimes hardly good enough to identify the present genus not alone the species. The only way to really identify them is to go again to the type locality and study the plants. When the type locality is given as Brazil or Mexico this, of course, becomes impossible, particularly when they even got the continent wrong!

Where plants are prone to cross pollination they are brought into the greenhouse and hand pollinated when seed is needed or bagged if plants are too large. Since the sale of many species is extremely limited they can be propagated by cuttings. The cultivated plants of some species are clones and self sterile, i.e. *Echinopsis multiplex,* and can only be reproduced asexually.

Question: All literature I can find on *Gymnocalycium schickendantzii* described it as having curved or recurved spines.

Answer: The description of *G. schickendantzii* in the Cactaceae of Britton and Rose says only "spines 6 or 7 all radial, more or less spreading." They show a color plate of a plant collected at Andalgala, Argentina, and two photos taken of plants from Cordoba. The type locality is Catamarca. None of the three pictures are alike and none from the type locality. The spines vary from 3 to 8 and from erect to appressed.

Now it should be noted that descriptions are taken from a specific plant which is supposed to be made into a dried specimen and filed in an herbarium for future reference. The older botanists often did not file a specimen. The descriptions were often made from greenhouse grown plants which in most cases are completely different from wild specimens. No two plants are exactly alike as no two humans are exactly alike, so if the type specimen represents an extreme of variation the description made from it may be so far off the general mean that it is difficult to tie in the common forms.

The more one studies the relationships of plants and animals the more one is impressed with the knowledge that God-made them to fit their environments and not to fit man-made categories. We are trying to classify permanently as a completed job that which nature has not finished with. One must think of a species or genus as groups of variants around a mean. He must endeavor to see their *similarities* for he is lost if he sees only their differences.

Question: What literature besides Borg's "Cacti" would be good for one interested in Gymnocalyciums, Echinopsis and Rebutias?

Answer: Britton and Rose "Cactaceae"; current German, French, Dutch, Danish, English and South American periodicals, Backeberg and Knuths "Kaktus A. B. C." Consult the Gray Herbarium files for pin pointing the descriptions of American plants no matter where published. The Index Kewensis unfortunately lags by several years 1950 being the last issue.

It should be noted that Borg's work is a collection and not a source book and is useless for critical botanical purpose. It is extremely useful to the collector and grower, however.

Question: In "Glossary of Succulent Plant Terms" page 42 it is said of the genus *Echinopsis* as having, "Flowers usually large, nocturnal, white to magenta in color." Magenta is a deeper shade than pink, more fuchsia. Could you name a species having this shade of color? Mrs. J. L. Vaninetti, Idaho.

Answer: Color terms are generally used rather loosely. There are no deep magenta colors among the old species. *Echinopsis leucantha* and *E. rhodotricha* are tinged violet or lilac. Some of the newer species are brilliantly colored as *E. kermessinia* with magnificent huge carmine red blossoms.

Please send questions direct to Johnson Cactus Gardens, attention Harry Johnson, Paramount, Calif.

Correspondence wanted: Mr. D. C. Cox, 42 Melton Rd., Queniborough, Leicester, England.

FIG. 23

EPIPHYLLUM SPECIES OXYPETALUM

Photo taken at Beahm Gardens

This Epiphyllum is one of the most popular of the night-blooming forms and is variously known under several nick-names such as: Queen of the Night, Night-blooming cereus, Dutchman's Pipe. It usually has three crops of blooms during summer and fall at about six weeks intervals. Flowers before opening point downward but when about three-fourths grown will start to turn upward with a long curved stem as a Dutchman's Pipe. Plant pictured had its main crop the middle of August. The first night 11 opened, the second night the count was 45 and the third night the final 15 buds opened. Flowers started opening about 9 p.m. and just as the sun rose wilted completely. It was a marvelous sight during the night and filled the air with a delightful fragrance. The plant shown above had a spread of six feet and about five feet tall.

FLOWERING DATES OF CACTI AND OTHER SUCCULENTS

Our request for flowering data evidently found many who were interested in the subject. Among those who have responded are: Mrs. Karl Withol, N. J.; Marvin Tooley, Texas; John M. Riley, Ga.; John E. C. Rodgers, Ohio; Jerome F. Lowenstein, Ohio; Mrs. J. L. Vaninetta, Idaho; and Robert S. Woods, California. Each of the above have kept careful records and no two have grown their plants under the same conditions. We feel sure that all of our readers will be interested in checking this series with their own flowering results. In this issue we are using Mr. Woods' report because it is typewritten and easier to prepare for the type-setter. If some member will volunteer to transcribe the other long hand papers we can print the series much faster; it is necessary to check all plant names against Borg or other reliable sources so that names will be spelled correctly.

Continued on next two pages

INITIAL BLOOMING DATES OF CACTI AT AZUSA, CALIFORNIA

Grown out of doors and recorded by Robert S. Woods from 1932 to 1948

SPECIES	YEARS	EARLIEST	LATEST	AVERAGE
Pereskia pereskia (on east wall of house)	6	10/19/38	11/14/41	Oct. 30
Nopalea cochinellifera	5	4/20/34	6/ 3/33	May 4
" dejecta	3	4/22/41	5/29/44	May 15
Opuntia ramosissima	2	7/ 6/32	7/16/33	
" arbuscula (did not bloom during 17 years)				
" whipplei	15	4/28/34	6/ 4/33	May 24
" parryi (in natural habitat)	17	4/ 8/34	5/19/42	May 1
" acanthocarpa	17	4/18/34	6/ 8/44	May 18
" echinocarpa	14	4/15/32	5/30/42	May 8
" versicolor	17	4/10/34	6/19/44	May 20
" imbricata	15	5/ 3/47	6/ 8/35	May 24
" fulgida (did not bloom)				
" spinosior	9	4/29/32	7/12/45	May 24
" prolifera (did not bloom)				
" parishii	8	5/24/41	6/14/38	June 3
" anacantha (?)	15	5/ 5/47	6/10/37	May 23
" basilaris (desert forms did not thrive)	13	4/ 8/34	5/ 8/48	Apr. 26
" santa-rita	17	5/ 4/47	6/ 8/33	May 21
" phaeacantha	15	4/29/43	5/28/33	May 9
" covillei (in natural habitat)	17	4/16/34	5/15/33	May 3
" vaseyi (in natural habitat)	17	4/ 8/34	5/10/35	Apr. 24
" engelmannii (?) (from so. Arizona)	17	4/11/34	5/11/44	May 2
" engelmannii (?) (salmon flower; Utah)	17	4/23/34	5/21/33	May 6
" vulgaris	16	5/ 7/36	6/ 8/33	May 18
" scheeri	2	5/11/44	5/13/37	
" dillenii	13	5/19/43	6/22/37	June 3
" aciculata (?) (red flower; no spines)	12	4/21/47	5/16/39	May 6
" littoralis	8	5/29/48	6/28/43	June 14
" tomentosa	7	5/24/47	6/24/44	June 9
" leucotricha	6	5/ 6/47	6/ 5/45	May 23
" maxima	13	4/23/44	5/24/41	May 9
" megacantha	9	5/13/37	6/22/44	May 28
" robusta	11	4/15/47	5/10/45	Apr. 27
" erinacea	17	4/ 2/34	5/ 8/48	Apr. 19
" microdasys	15	5/15/37	6/ 4/38	May 27
Wilcoxia poselgeri	4	4/ 9/44	5/20/45	May 9
" schmollii (senilis)	11	4/ 8/47	5/ 5/45	Apr. 22
Nyctocereus serpentinus	14	4/25/34	7/21/38	May 28
Neoevansia diguetii	2	9/ 7/41	10/ 2/38	
Heliocereus speciosus	12	4/21/47	6/29/37	May 26
Trichocereus spachianus	13	6/ 9/32	8/11/35	July 4
Cleistocactus strausii	6	3/ 6/43	7/18/45	
" buchtieni	7	7/ 9/44	8/22/42	July 21
" tupizensis	5	4/ 3/46	5/14/44	Apr. 25
Hylocereus undatus	2	6/12/32	6/23/33	
Aporocactus flagelliformis	11	4/ 6/41	5/16/45	Apr. 29
Echinocereus luteus	8	4/17/40	7/ 3/45	June 3
" berlandieri (blanckii)	11	4/17/34	5/29/46	May 10
" rigidissimus	3	6/ 6/ 32	6/20/33	June 13
" fendleri	16	3/29/34	5/ 8/38	Apr. 20
" engelmannii	15	3/22/34	5/22/35	Apr. 20
" salm-dyckianus (?) (night-blooming)	6	4/13/47	6/22/42	May 12

SPECIES	YEARS	EARLIEST	LATEST	AVERAGE
Rebutia minuscula	10	3/22/43	5/13/40	Apr. 18
" senilis	13	4/11/36	6/ 2/38	May 8
" chrysacantha	6	5/ 3/44	6/ 6/39	May 12
" aureiflora	11	4/ 2/42	5/26/45	Apr. 30
Lobivia (pentlandii ? brownish-yellow flower)	8	5/ 3/47	5/28/45	May 16
Chamaecereus silvestrii	15	4/19/34	6/ 1/48	May 14
Echinopsis multiplex	17	4/21/41	5/29/46	May 6
" (eyersii? White flower)	13	3/12/42	5/10/37	Apr. 26
Neoporteria nidus (Chilenia senilis)	4	3/ 5/46	4/ 6/44	Mar. 18
Hamatocactus setispinus	6	7/ 2/46	9/ 5/47	July 27
Echinofossulocactus multicostatus	8	1/11/43	3/ 9/41	Feb. 19
" (crispatus ?)	3	2/14/46	2/19/47	Feb. 16
Ferocactus fordii	9	6/ 2/47	7/ 7/40	June 22
" acanthodes	5	5/12/37	6/30/33	June 3
" viridescens	13	5/18/34	6/21/35	June 2
" uncinatus	4	3/29/34	4/10/35	Apr. 5
Gymnocalycium mihanovichii	6	4/27/40	8/30/48	June 21
Astrophytum myriostigma	11	4/12/47	6/ 7/39	May 17
" capricorne	4	5/ 6/47	7/ 3/45	June 8
" ornatum	6	4/25/43	5/28/45	May 13
Pyrrhocactus tuberisulcatus (horridus)	7	5/18/47	6/26/44	June 8
Notocactus scopa	4	6/ 3/47	6/28/48	June 15
" mueller-melcheri	4	4/29/47	5/15/45	May 10
" mammulosus	7	6/ 5/47	6/30/48	June 20
Ancistrocactus scheeri	6	3/ 1/43	5/17/48	Mar. 25
Thelocactus bicolor (tricolor)	2	6/16/45	6/18/46	
Solisia pectinata	4	3/13/47	3/28/46	Mar. 21
Mammillaria nivosa	3	4/25/43	6/ 1/42	May 8
" carnea	8	5/ 6/43	5/26/42	May 13
" karwinskiana	11	9/ 9/44	11/29/38	Oct. 17
" chinocephala	11	2/17/42	4/ 2/38	May 5
" elegans	11	10/ 8/40	11/29/46	Nov. 6
" altibensis (?)	3	1/ 6/48	2/11/47	Jan. 21
" candida	3	3/ 5/41	4/15/38	Mar. 21
" fragilis	9	10/25/42	11/26/39	Nov. 9
" elongata	10	1/23/39	4/ 8/37	Mar. 3
" bocasana	12	2/ 5/38	4/17/47	Mar. 5
" dioica	3	1/28/34	3/11/32	Feb. 21
" microcarpa	4	5/18/33	7/23/35	June 19
" microhelia	5	3/ 5/41	4/19/37	Mar. 28
" blossfeldiana	7	2/17/42	5/10/40	Mar. 23
" johnstonii	2	3/21/47	3/24/45	
" mendeliana	6	1/ 3/42	3/ 7/40	Jan. 23
" " durispina	6	9/29/47	10/31/42	Oct. 17
" hahniana giseliana	2	10/ 6/47	10/10/46	
" woodsii	9	10/ 9/40	12/ 6/39	Nov. 3
Zygocactus truncatus	14	1/10/43	3/ 8/37	Feb. 3
Schlumbergera gaertneri	12	4/24/38	5/28/45	May 11
Nopalxochia phyllanthoides	9	5/11/38	5/27/42	May 17
Epiphyllum (ackermannii ? small red flower)	16	3/19/44	5/24/35	Apr. 27
" Conway's Giant	10	5/ 2/47	5/26/42	May 14

PLANT OF THE MONTH

By HARRY JOHNSON

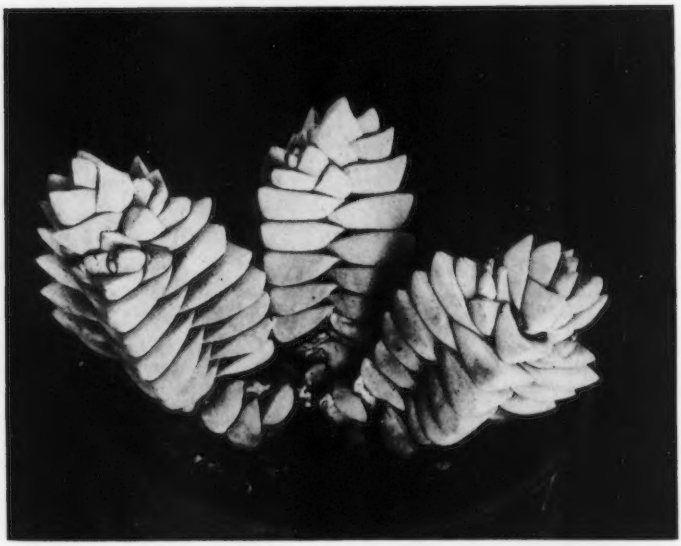


FIG. 24. *Crassula cornuta.*

Crassula cornuta

One of the loveliest of the small Crassulas. It is native to South West Africa. In cultivation it may reach 3″ in height but generally is less. The whole plant is pure white, the thick leaves almost smooth. At first the stems may be solitary but later are branched. There are several of these white species all quite rare in collections. They are of the simplest culture. Give them a sandy soil, equal parts of sandy loam, peat moss, sand and leafmold seems to suit them quite well. Growth should be fairly slow to keep them compact and bright. I find they grow nicely when given a light place close to the window but protected in summer from the noonday sun. Water when dry but not when still damp. They are not tricky nor inclined to rot.

Werckleocereus glaber

Certainly a charming plant when in bloom. It is vigorous but never seems to get out of bounds. The flowering period is in late spring or early summer and it blossoms abundantly. As the photo shows, the climbing stems are triangular, glaucous green and emit aerial roots. It thrives in a compost of 3 parts peatmoss, 1 part light loam, 1 or 2 parts sand with leafmold or dried cow manure and if you have it granulated charcoal. Such a compost needs liquid fertilizers in dilute form when the plants are growing in summer as they are anything but fertile. They do best with a little shade and grow splendidly outdoors during summer. It is a Costa Rican plant and likes moisture.

FIG. 25. *Werckleocereus glaber*

OROGRANDE

OROGRANDE, in Otero County, New Mexico, is the site of the second field trip planned for the Convention of the Cactus & Succulent Society of America, being held in El Paso, Texas, July 8th to 12th, 1955.

An hour's drive from El Paso on Highway 54, Orogrande has many facets of interest besides the cactus to be gleaned there. John H. Leasure, Chairman of the Convention, states that about the same varieties can be found at Orogrande as was listed in the previous article as growing at the Hueco Tanks, site of the first field trip. In addition, many hybrid cacti are found around Orogrande area.

Orogrande, 5170 feet altitude, lies on a picturesque elevation between two mountain ranges in the Jarilla mountains. Geronimo found it a safe stronghold, two sides guarded by mountain wilderness, providing unimpeded views in other direction for his sentinels.

The presence of precious metals there was known but the nearest water was in the Sacramento River, 40 miles to the north in the Sierra Blanco Mountains. A real "gold rush" occurred in 1905-06, bringing the population up to 2000 persons. George E. Moffets of Alamogordo was the man who found the nugget of gold "as large as a man's finger" which a newswriter dubbed "oro grande" and soon the town became identified by that name, though formerly caled Jarilla Junction. During the next eight years many fortuneseekers came to Orogrande to prospect. It is estimated that the area produced more than a million dollars in gold, silver and turquoise during that period.

According to an article in the Alamogordo News, October 31, 1929, an opportune swindler (after the statue of limitations had run out, precluding punishment) confessed his guilt in fleecing thousands in speculations on the bonanza-city of Orogrande. He and his associates drew plans and specifications for a metropolitan city a mile square, containing about 5000 lots. The lots sold like hotcakes until the bubble broke a year later, when it was learned that the developers merely held a contract for the purchase of the land, and that some of the choice tracts had been sold to five or six different persons.

At the height of the boom, optimistic capitalists of Marysville and Oketo took over the waterworks rights to supply the city, smelter and mammoth industries that were reported to be coming. They tapped the Sacramento River in the Sierra Blanco Mountains, 40 miles away, digging a canal through the wild country for ten miles to a large reservoir overlooking the townsite. Just when the water was ready for use at Orogrande the original promoters disappeared, leaving the investors holding the sack.

Some five or six large mining operations were carried on, and remains of 50-60 small-scale diggings are reminders of the past. Best known of the mines was the "Nannie Baird," from which an estimated $135,000 in gold was taken. The dividing point between two types of gold "workings" found in the area was about the site of the "Nannie Baird." Gold panned by dry washes on the west side of the mountain carried down the canyons in nugget and flour gold. From the eastern slopes, running almost to the highway north of Orogrande, has been found "hair gold," some resembling wire-gold jewelry.

The Apaches mined the area for turquoise and valuable specimens have been found of pottery, metates, manos and broken stone utensils, in the hills occupied by the Indians.

During the years of the depression into the early "thirties," swarms of gold seekers beseiged the area without rights or permission. Sometimes as many as fifty groups worked in the canyons branching out from the tailings of the once productive "Nannie Baird." Jobless, the squatters dreamed of another bonanza, but probably did find only enough to keep them eating. No mining work is carried on now.

Although the area has been well scouted, many beautifully colored rocks are to be had for the picking up, to add beauty to cactus plantings or to delight rockhounds. Museum specimens of jarosite, orthoclase (crystals) and turquoise were found in the district.

According to the book, "Minerals of New Mexico," by Northrop, the following came from the Orogrande area: Barite (heavy spar) or calcite rough crystals, chalcanthite (copper vitriol), chalcocite or copper glance, chalcopyrite or copper pyrites, chrysocolla, copper pitch ores, diopside, dioptase, epidote, gold, several different iron ores, orthoclase, potash, feldspar, pyroxene group, quartz, tremolite, a species of amphibole, turquoise (chalchihuitle was the name given by the Indians), wilfenite or yellow lead-spar, zircon, small crystals in rocks and black sand.

MRS. ELENOR BROWN
Convention Publicity Chairman
5201 Timberwolf Drive
El Paso, Texas.

DENDROCEREUS and NEOABBOTTIA

By C. BACKEBERG

Both monotypic genera are among the rarest cacti, and as far as I know, are never seen in European collections. Britton and Rose say of *Dendrocereus* "one of the most striking and interesting of all cacti. Many individuals have the general aspect of apple trees and one realizes that it is a cactus only by rather close observation." (The fruits resemble a pear more than an apple, Backbg.) While a plant of *Dendrocereus* flowered in the New York Botanical Garden in 1911, *Neoabbottia* was collected for the Monograph of Britton and Rose only as dry herbarium material; we see only drawings, but no photos of the plant in literature, except the habitat photos made by the botanists who collected for Britton and Rose.*

In Hamburg I had a living specimen of *Dendrocereus* but it died during the war. In order to study these rare plants I wrote Père Alain, Habana, who kindly collected a piece of flowering size, i.e., one which I could hope that it would flower some day. To see flowers of large cerei, which are without flower when visiting the habitat, it is a nearly infallible method to collect a branch old enough to make flowers; under favorable conditions in cultivation they will produce flowers which can then be studied carefully. Such the plant did, and I am giving here some new details.

With *Neoabbottia* it was different. We knew nobody who could collect this plant in Dominica or Haiti, until one day I got some cactus photos for determination which were photographed in Dominica by Prof. Humbert, a well known specialist in Compositae. In one photo I discovered trees of *Neoabbottia* and it was just in the last moment that Prof. Humbert could return to that habitat to collect some branches, one with a fruit. The material arrived well and is living in a European collection. It is very rare. Before Britton and Rose got the dry material, the plant was known only from the old illustration of Plumier. Plumier's description was very short "*Melocactus arborescens,* flore ex albido"; Tournefort gave nearly the same text in 1719, and Lamarck named it *Cactus paniculatus,* De Candolle *Cereus paniculatus.* The top of a plant was shown in Britton and Rose, Vol. II: Fig. 258, but the photo is poor.

Therefore I was very pleased when the living new material arrived, and I could observe some interesting details in both genera, given here with photos which may contribute to a better knowledge of these rare genera.

DENDROCEREUS Br. & R.

"A monotypic genus of Cuba, of which *Cereus nudiflorus* Eng. (1869) is the type. It grows in the flats around Habana and on the coast of Matanzas, Santa Clara and Oriente provinces of Cuba. The plants are to 10 m. high, with a definite woody trunk and a very large, much branched top, the trunk often 1 m. long or more. The branches are 3-5-winged, ribs to 7 cm. high, with low crenate margins; areoles 0.5-5 cm. apart, felted, sometimes spineless, sometimes bearing 2-15 spines, acicular, to 4 cm. long and with black tips. The flowers are 10 to 12 cm. long." I saw them 14 cm. long. They are borne near the top of the joints and nocturnal, the scales on the tube below with some felt, above naked and connate (see fig. FB and FG). Britton and Rose say the wool in the flower-areoles is white, I saw it grayish. They say "tube with usually 1-3 short black spines." In our plant there were no spines. Perhaps this characteristic is variable. Instead of "outermost segments of the perianth triangular," I saw them rounded and instead of "outer segments greenish yellow," I saw them reddish.

Further Britton and Rose say "Stamens numerous, borne on the elongated throat, slightly exserted; style very thick, 5-6 mm. in diameter, entirely filling the tube proper; stigma lobes numerous; fruit globular or longer than thick, sometimes pointed, 8-12 cm. long, smooth, greenish, naked, with a very thick tough rind 10-15 mm. thick; seeds 3 mm. long."

*An excellent habitat photo was published twenty years later in "Cactaceae" Marshall and Bock, pg. 101.

(A) *Dendrocereus nudiflorus.* A branch with a stunted new joint in the apex in which length-growing stops annually, a new joint always growing from the axis. (B) The new joint grows from the stunted part of the old apex of a branch. (C) A bud appears in an areole surrounded by a circle of wooly tomentum. (D) The bud is growing; the tomentum in the axils of the tube is reduced and the anthers already seen. (E) The flower appeared near the apex. In the upper areoles only one slender spine is visible. Later they become stout and are said to be 8 cm. long. (F) One of the lower areoles on the flower; the "usually 1-3 short black spines on the ovary" have not been seen in this flower. (G) One of the upper scales which are fleshy and broadly connate on the tube, tomentum and spines reduced (by coalescence ?). (H) Longitudinal section of a flower. Just above the nectary the woolly hairs are visible in a zone about 1 cm. high. The style is hollow above, no spines are seen on the ovary. (I) The fascicular coalescence of seed-cords in the placenta of *Dendrocereus.*

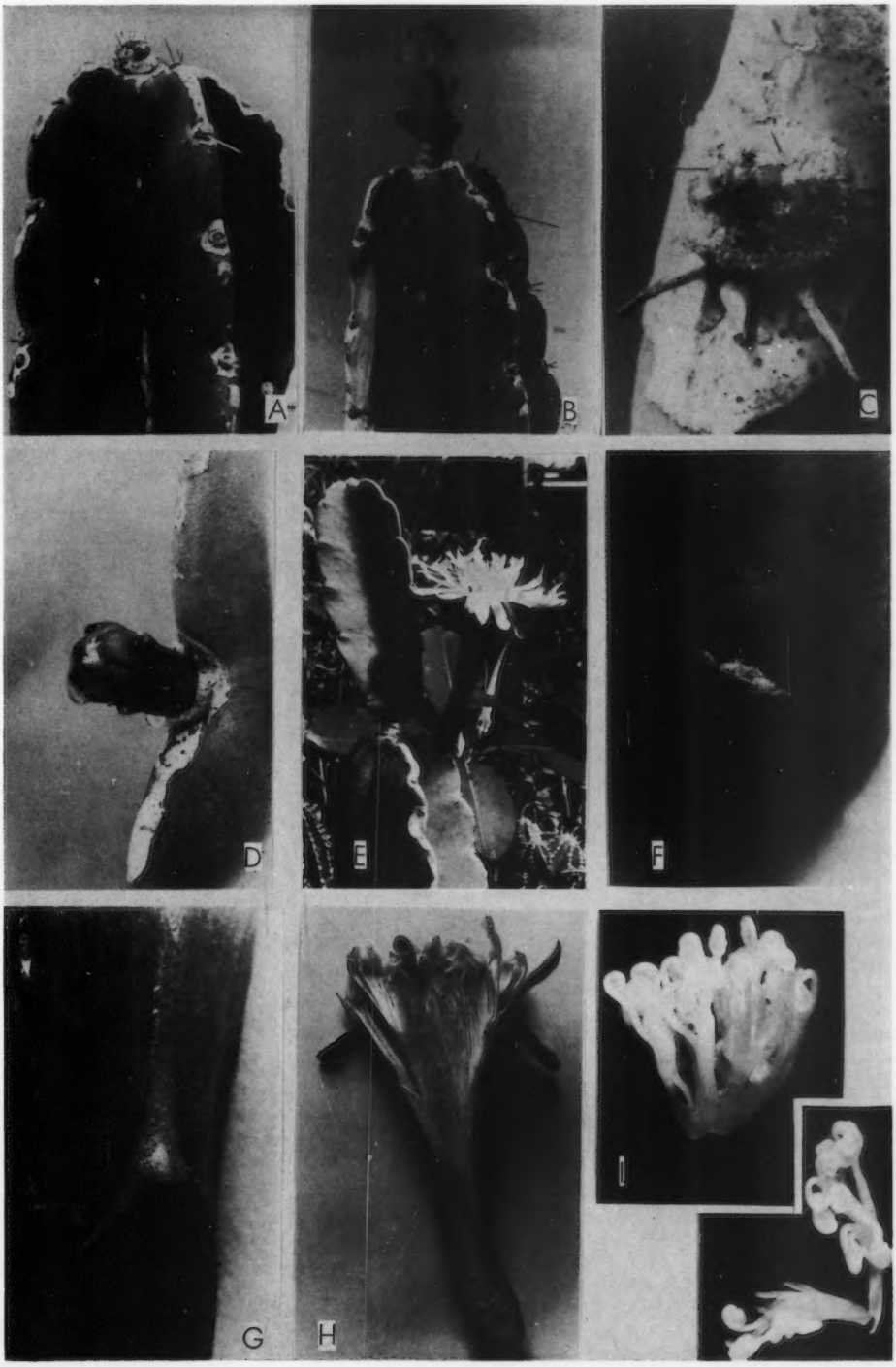


FIG. 26. (See opposite page)

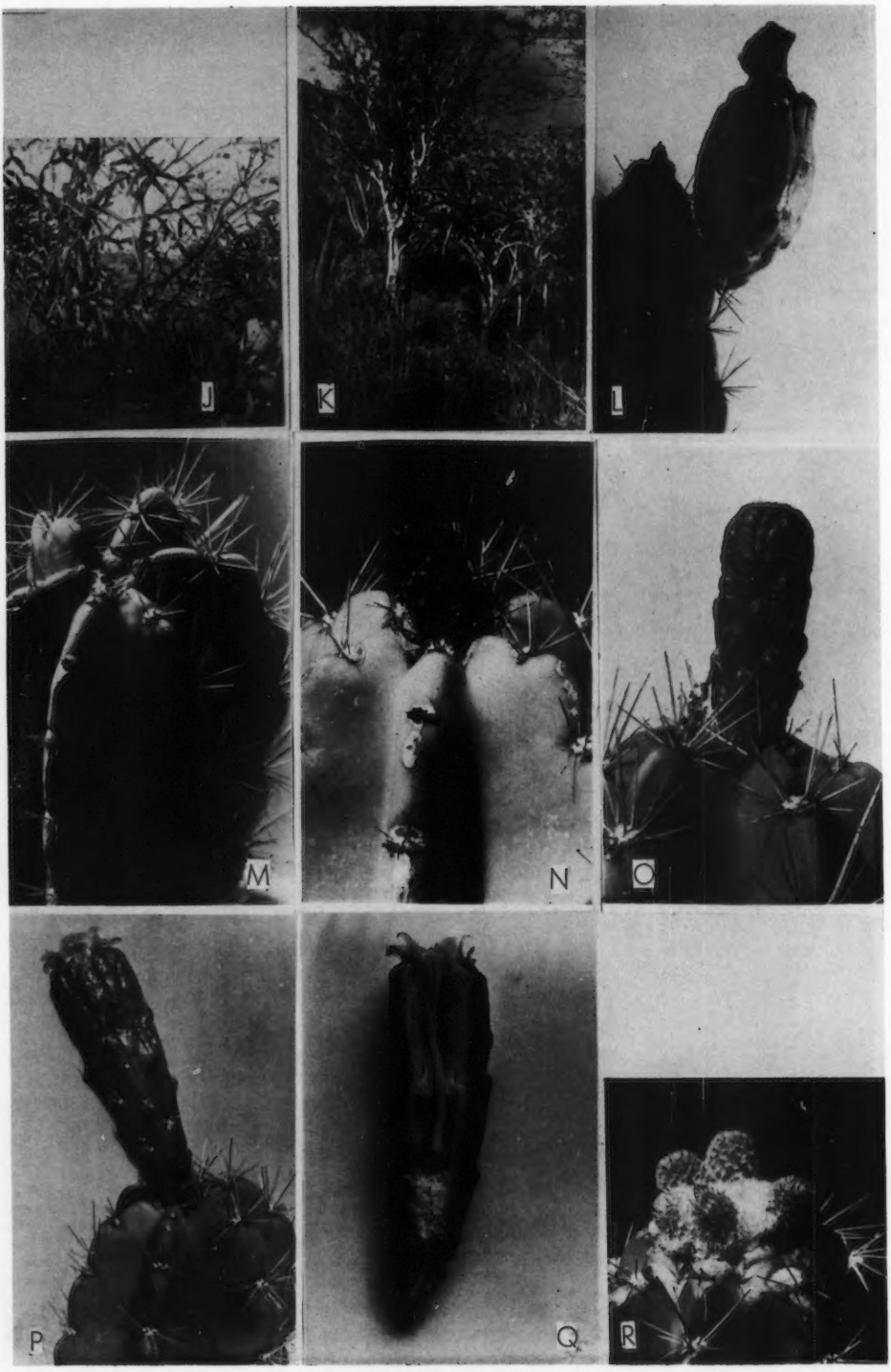


FIG. 27. (See opposite page)

I am giving photos of the imported branch, a young branch and the areoles respectively, the bud and how it arises, photo of the flower and its longitudinal section with macrophotos of the tube-areoles, lower and higher ones.

On the photo of longitudinal section of flower one can see the rather elongated nectary cavity. And above it there is a rather interesting characteristic, not cited by Britton and Rose: a zone, more than 1 cm. high, of short tomentum-like hairs, but obviously no staminodia. The stamens are borne on one-half of the inner tube-wall length. The photo also shows a section of the thick style which is hollow above. Britton and Rose say that the flower is narrowed at base; but I have not seen this. The style is rather thick, but I cannot say that "it is entirely filling the tube proper" (see photo). The inner segments are white, narrowly oblong, 4 cm. long. The tube is 18 mm. thick. I complete the description with additional data: Open flower is 12 cm. wide, inner segments to 5 cm. long; stamens white, anthers yellow; lobes 8, 12 mm. long, greenish cream; sepals reddish, tube greenish, grooved. My observations are differing from those of Britton and Rose, as said above, in that I did not see any spines on the tube; outer segments were reddish and a zone of felt seen between lowest stamens and nectary cavity. The spine-characteristic on the tube and color of sepals may be variable.

Further I show a photo of the placenta which is tufted-connate, somewhat similar to *Leptocereus,* but still more resembling those of *Pfeiffera* or *Arequipa.* As *Erythrorhipsalis* has very short spermatic cords, same as *Echus. horizonthalonius,* hitherto no exact other conclusions are possible. From the form of the placenta and the connate cords a reduction line is visible and this characteristic is variable.

In *Neoabbottia* I find different observations from those made by Britton and Rose. In the flowering zone characteristics, Britton and Rose say "flowers . . . borne several together at distal end of a terminal branch from a small, felted cephalium." And Berger says "An der Spitze der Aeste befinden sich abgesonderte kurze, stumpfkantige Blütenstände oder Cephalien, welche mehrere Jahre lang tätig bleiben."

I have seen nothing at all of such "edged short cephalia," and also on the old illustration of Plumier, in Britton and Rose, Vol. IV: 248, there is nothing to be seen of such characteristic. Plumier's illustration shows only occasionally a flower at the tip of the branches, but mostly laterally near the top, same as in my photo fig., L., and which shows a fruit borne near the top from a quite normal areole.

The following extract is from the description by Britton and Rose:

NEOABBOTTIA Br. & R.

A tree-like cactus to 10 m. high with a smooth, upright, terete trunk and a much branched top, the branches strongly winged or ribbed, normally from distal end of preceeding branch, but sometimes from below tip; ribs thin and high, very spiny; flowers nocturnal, small, tubular, with a narrow limb; perianth persisting on the ovary; perianth-tube and ovary bearing small scales with short wool and an occasional bristle in their axils; perianth-segments very small; throat of flower a little broadened at top, bearing many stamens; style slender; fruit oblong, turgid, nearly naked, deeply umbilicate; seeds minute, black, muricate. Type: *Cactus paniculatus* Lamarck.

In the description of *N. paniculata* it is said that the branches are strongly 4-ribbed, occasionally 6-ribbed, ribs thin, 1.5-2.5 cm. high, somewhat crenate; areoles 1.5-2 cm. apart; spines 12-20, acicular, brownish to gray, 2 cm. long or less; cephalium 1-1.5 cm. in diameter, becoming elongated and angled; flower straight, 5 cm. long, with a limb about 3 cm. broad, tube 6-7 cm. long, about 18 mm. in diameter, with walls 5-6 mm. thick; inner perianth-segments greenish white, short oblong, about 1 cm. long; throat 18 mm. long, with numerous filaments, these with a knee near base and pressing against style, stamens and style included; ovary and

(J) *Neoabbottia paniculata* v. *humbertii* as it grows in the dry places near the sea-shore of Dominican Republic. The stems are branching in a rather short stem, in this specimen. Probably variable in this variety as in the type of the species, (see K). (K) *N. paniculata* type (at right in the foreground) in the dry coastal region of the Dominican Republic, with its typical stem as described by Britton & Rose. (L) Fruit of same is 4-ribbed. Here a flower was developed laterally below the apex which shows the stunted top-zone as it was regarded to be a kind of cephalium; but this photo shows that this was a mistake. (M) *N. paniculata* v. *humbertii,* with depressed apex, i.e. without elongated and angled cephalium as was described by Britton & Rose. Photo shows that it is the stunted top-zone forming the end of the annual joint-growth, where flowers are sometimes produced in youngest areoles (see L). (N) A bud of same which appears in the depressed apex, less woolly than in the type. This is the same branch as in (M), showing the same side of it, after the bud appeared. (O) Bud of same some days later with the thick scales, broader than in the type. In the tip of the bud the bristles, at first rather long, have been diminished. (P) Same flower at 9 a.m. beginning to close. Compare with (T) of the type which have more woolly scales near the ovary. (Q) Longitudinal section of the same flower with short seed-cavity and thicker wall between this and the base of the style which is pinkish white; the type is white below, pink above. The tube proper is 1 cm. longer in this variety than in the type. (R) A woolly and somewhat prominent apex in a specimen of the type, producing 5 woolly and bristly buds. The stunted zone of the apex is well seen.

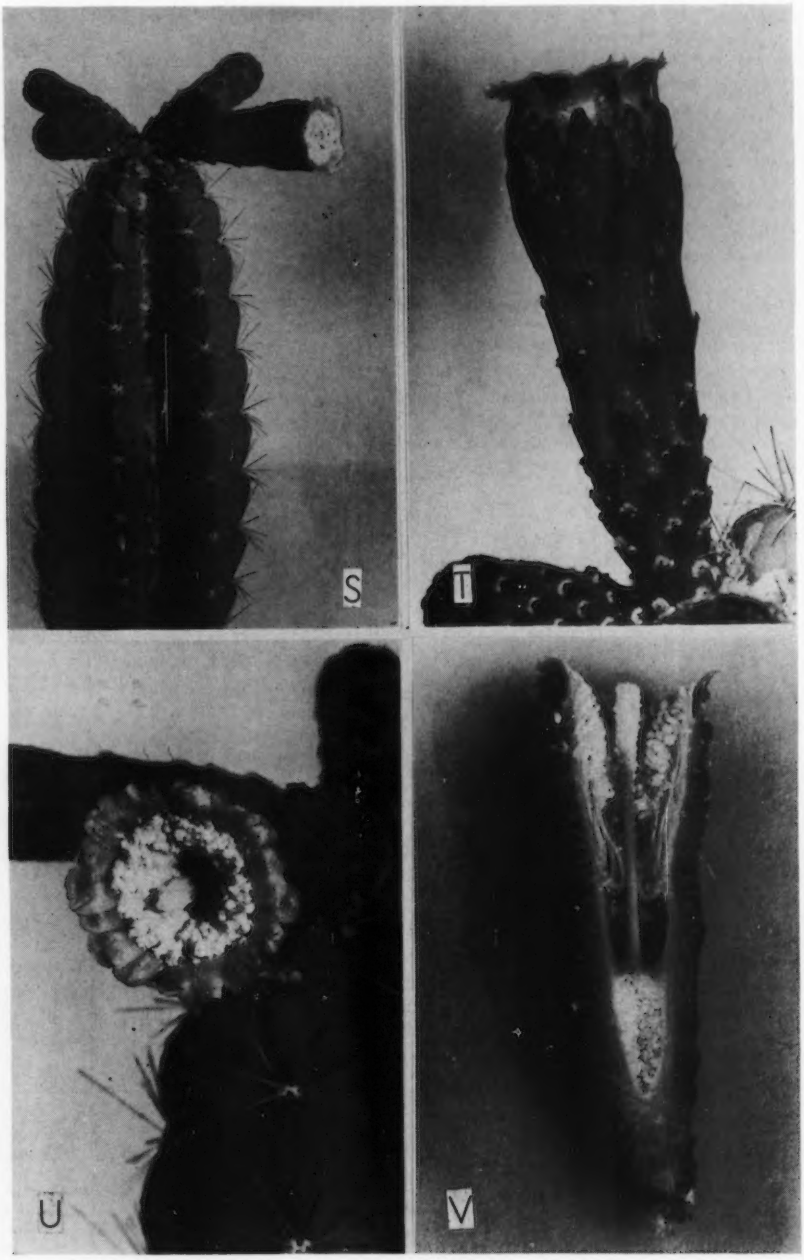


FIG. 28

(S) A flowering tip of the type of *Neoabottia paniculata*. At first the buds are erect, later they spread laterally. (T) The flower of the type of *Neoabbotti paniculata* fully opened, i.e. the short petals spreading and somewhat recurved. This shows the close relationship to *Leptocereus*. (U) Fully opened flower of *Neoabbottia* type which has greenish-white flowers, the var. *humbertii* creamy-pink. (V) Longitudinal section of *Neoabbottia*-type flower—more oblong seed-cavity than in the variety.

flower-tube tubercled, the former with short and the latter with oblong tubercles, each ending in a depressed areole subtended by a minute scale; areoles bearing a tuft of brown felt and occasional brown bristles; fruit oblong, 6-7 cm. long, 4-5.5 cm. in diameter, nearly naked, rind green, thick, hard; seeds rounded above, cuneate at base with a large lateral depressed hilum. Type locality was given as "Haiti." Distribution: Hispaniola.

In a foot-note Britton and Rose say, "In habit it resembles *Dendrocereus,* its branches resemble *Acanthocereus,* and the small limb of the flower resembles *Leptocereus;* but the plant differs from all of these in bearing several flowers at the end of terminal branches and in developing a kind of cephalium. In the last respect it approaches *Neoraimondia* near which we would place it in our present classification."

By my own observations there are branches with 4, 5 and 6 ribs. Those with 4 ribs were sent under the local name "Villa," the others under the local name "Duverge;" the names refer, following Prof. Humbert, to the places where the plants were found.

Obviously all Neoabbottias vary with branches having 4, 5 and 6 ribs. A 4-ribbed specimen was seen with lateral fruit, same as in Plumier's illustration, but the 6-ribbed, also flowered apically, with several flowers, having greenish white petals as in the type described. This means: the origin of flowers is variable, it can be in the apex and laterally near the tip of the branches!

About the "cephalium."

Britton and Rose say *Neoabbottia* resembles in habit a *Dendrocereus.* Also this plant sometimes makes (see fig. A) a knob at the tip of the branches. And why? There are several cerei which make annual joints of branches, as in *Armatocereus* (all species), *Cereus huntingtonianus, Dendrocereus, Neoabbottia.* The formation, regarded to be a cephalium by Britton and Rose, I regard to be the same thing as in my Fig. A, the top-zone of *Dendrocereus,* with a stunted formation of the beginning of a new joint which is very woolly (as sometimes in *Neoabbottia*) when the young areoles are rather woolly. The characteristic of *Neoabbottia* is obviously that it flowers either in these very youngest areoles (of the commencing new joint) or the uppermost areoles of the fully developed joint, near its apex.

Therefore we see flowers in the apex (fig. M. N) which is even somewhat depressed, and not much tomentum seen in it, while in others the stunted dry zone is somewhat elevated (as in fig. A of *Dendrocereus*) and therefore sometimes seemingly somewhat angular (by the rib-formation in development. It is rather curious that Britton and Rose when giving such a cephalium as characteristic, did not notice that in Plumier's original drawing many flowers and fruits are lateral.

In the Marnier collection, several specimens were producing flowers, and this let us make an astonishing observation that there is a variety in this monotypic genus: at first with less wool in the bud (because there are less tubercles on the tube), the tubercles at tube in the lower part somewhat less prominent and with less tomentum, the measurements of the flower nearly in every respect somewhat larger and the color of the inner segments is creamy-pink instead of greenish-white as in the type of the genus, as described by the first author and Britton and Rose.

This variety has been named in honor of Prof. Humbert, who re-collected this rare plant:

Neoabbottia paniculata v. *humbertii* Backbg. n. var.

Differt a typo floribus aliquid crassioribus, tuberculis paucioribus in tubo, phyllis perigonii interioribus colore rosea-albido.

The flower was observed in a specimen with the habitat name "Villa." According to Prof. Humbert it comes from rather dry places near the coast of Hispaniola as do all of the Neoabbottias. The variety differs from the type by the aforesaid characteristics of petal-color and the number of tubercles on the tube, but the longitudinal-section shows also some difference in the length of the seed-cavity, etc.

It is rather curious that in the young buds of *Neoabbottia* the bristles are much more remarkable than later in the fully developed flower; it seems they are caducous and only insignificant ones are later persisting. It seems that occasionally the rest of them are found also on the fruit.

I am giving a number of photos of the odd flower whose limb resembles a *Leptocereus,* opens in the evening and closes in the morning at about 9 a.m. I did not perceive any remarkable fragrance.

It seems *Dendrocereus* and *Neoabbottia* are somewhat allied—at least in form of habit—by their origin obviously from allied predecessor-populations. In *Dendrocereus* with a reduction of spine and shoot-structure of flowers. In *Neoabbottia* with a reduction of the length of inner perianth-segments, in the characteristics of flower-origin near the apex and in the stunted zones and the annual new production of joints they resemble considerably.

Further details may be seen from the photos. I have given in my paper* on "photo-phytographic methods" my ideas, in how far I regard photos to be a good substitute for detailed descriptions which are of less value than what I call photo-phytographic illustrations.

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*A forthcoming article with wonderful photographs.

EPIPHYLLUMS FOR BEAUTY AND INSPIRATION

Suggestions on the Culture of Epiphyllums

From *Bulletin of the Epiphyllum Society of America*

By E. G. BROWN AND JOHN WHITCOMB NASH

Growing Epiphyllums for choice blossoms involves some knowledge of their background, parentage and habits—and only those should be entrusted with their care who really love them. Like orchids, they are epiphytes, and as a rule they will grow better in pots or boxes under trees or other suitable shade such as a lath house, than in the ground. An epiphyte is a plant that grows in crotches of trees and similar places, and has a branching hanging habit—some do the same from rock crevices.

One of the principal habitats, if not *the* principal habitat of Epiphyllums (original species) is in tropical wooded areas. There they thrive in pockets of decaying vegetation, fertilized by bird droppings, stimulated in their growth by filtered sunlight through the tree branches and enjoying the high humidity of their jungle home. The wild or original species, however, would be hardly recognized in the marvellous creations of its hybridized descendants which have been vastly changed in variety and range of colors and adapted to flourish in other zones far from their native home.

Growing is a vital function. Every Epiphyllum plant enjoys being given fertilizers, water and heat. From 55-85 degrees F is a good temperature range for three or four months in the hottest part of the year, saturating the soil and roots with water thoroughly every day *if necessary*. Give manure water, for rapid growth, two or three time a month, if you care to, in the growing season. They must be made to grow if the blossoms are to be superlative. Remember they *have* to grow. If they don't grow well, they won't blossom well.

Epiphyllums shouldn't be allowed to go really dry (for weeks at a time) or all growth will stop, making blossoms small and unsatisfying. That is where the difference between success and failure will show. In the coldest weather, when the temperature does not get above 35 degrees (they do not tolerate lower than 30 degrees) they need not be watered more than twice a month. It will do them good then to keep them as dormant as possible by not stimulating growth in any way.

1. *Climatic Conditions*

a) Never allow to remain in full sun—especially afternoon sun.

b) Filtered sunlight such as in a lath house—reflected sunlight from a white wall—diluted sunlight through whitewashed overhead glass—all are satisfactory.

c) Epiphyllums can be and should be kept cold in winter but never below 30 degrees.

d) In winter keep on the dry side as well as cold. Water only once every seven (7) days at 40 to 45 degrees. At 35 degrees or below, water only twice a month *or* as needed.

e) At 40 degrees or less, soil tends to hold water, plants are then dormant and do not absorb so much water. There is also much less evaporation in low temperatures. When temperature rises, water well—then let dry down to moist (practically dry) according to season.

2. *Air*

One of the most important and usually overlooked requirements in the growth of Epiphyllums is the craving of the root system for AIR. This search for AIR is evidenced by some of the roots seeking exit through the drainage hole and others surfacing. There are of course, other reasons at times for this but the necessity for AIR is there and must be provided for through drainage hole at bottom of container with free air circulation *around* each plant. Air thus provided for the roots will result in new growth—more blooms and more colorful blooms.

a) If pots are in saucers—you can use several small tiles in saucer to raise pots so AIR can enter—water will drain out of pot and roots not stand in water and drown.

b) If plants are on the ground large pots can be placed direct on *coarse one inch gravel*—this provides space for entiry of AIR—small size gravel or sand will allow pot to sink into ground and stop aeration.

bb) Air and drainage are so important to epiphyllum roots that pleasing results have been obtained by the use of ⅓ crushed pot-sherbs or charcoal (about ⅛ in. square) in the base of the pot with balance of soil mix (⅔) on top.

c) If pots are on wooden shelves—take ordinary building laths—saw in ½ long way—cut length to width of shelf—nail across shelf ½ in. apart so water can run through laths off shelf also allowing entry of AIR through drainage holes. Never place pots on smooth flat surface, which slows drainage and *prevents* AIR rising to roots through drainage hole.

d) Small pots can be placed on ¼ in. or ½ in. galvanized wire screen laid over coarse gravel bed, as they may not stand on large size gravel without support or they can be placed on inverted saucers BUT the coarse gravel is better for the larger pots because it admits more AIR. Larger pots will readily stand on the coarse gravel.

e) If plants are indoors or where drainage water would be inconvenient use small tiles in saucers as stated, for AIR and drainage.

3. GOOD DRAINAGE

Is a MUST or roots will rot and entire plant may wither and die. Slow drainage should be corrected at once. It means *real* trouble. Correct by repotting in new soil.

4. WATER

a) *Keep moist* all through the year but give all the water they can drink in the growing season from June 15th through October 15th. (Remember plants must not remain soggy.)

b) Always more in hot weather—plenty in August and September to October 15th—then less from October 15th—November—December.

ROUND ROBIN NOTES

Cactus and Succulent Round Robin No. 1 made a quick trip this time. Gladys Panis has been examining the tiny succulent flowers with a magnifying glass and finds a new world of interest in them. A microscope would reveal much more. Marian Fox's television takes much of her spare time and her plants benefit from her neglect. Mary Anderson has been fighting mealy bugs, also watching a bud on *Aloe variegata*. Ella Nipper gave some helpful hints from her wide experience—giving Faucarias a tonic of a bit of bone meal, keeping *Crassula argentea* in small pots till they have outgrown them, starting small seeds on a brick kept in a pan of water, etc. None of us envy Marie Podgajsek's Minnesota winter—32 below zero, twice! Her *Euphorbia splendens* is still in bloom. The director has brought up her *Mammillaria bocasana* to put in a west window; in about six weeks they will start to flower and keep it up till fall. Gladys Panis also told how to get rid of red spider—wait till a good warm day, then blow sulphur over the infested plants.

MARY KARR, *Director*
Iantha, Missouri

ITALIAN DEALER

An interesting cactus catalog and a poster showing 80 small pictures of cacti and succulents just received. Send 50c in International Postal Coupons to Francesco Allavena Figlio, Casella Postale 1, Bordighera, Italy.

MORE ABOUT DUDLEYAS

By H. G. RUSH

Of the many species of *Dudleya* which Mrs. Rush and I have collected or have seen growing in collections, the one plant which was possibly the second best known species has never received adequate publicity. This is *Dudleya lanceolata* (Nutt.) Br. & R., which has its distribution quite generally throughout southern California.

In the search for published material on this species, I found only one or two short articles dealing directly with *Dudleya lanceolata* and one or two mentions of it in connection with its very white relative *D. pulverulenta.*

Dudleya lanceolata and *D. pulverulenta* were both described and published as *Echeveria* by Nuttall in 1840 and when Britton & Rose erected the genus *Dudleya,* they chose *Echeveria lanceolata* Nutt. to be the type species of this new genus.

There is one peculiar fact which we have noticed on our many trips after *Dudleya;* wherever plants of *D. pulverulenta* are found, if you will search nearby for a cool, shady or moist spot, nearly always you will find plants of *D. lanceolata* growing there, but not always do you find the reverse to be true.

Dudleya lanceolata seems to be quite variable in form depending upon where it is growing and upon the amount of moisture and shade that are available. We have made many collections which we are certain represent this species but which at first glance, are grown so differently that one would not immediately recognize them.

The basal leaves of this species are said to be only four to six inches in length but one plant collected in upper San Juan Canyon had leaves which measured well over nine inches long and nearly one and one-half inches wide. This condition was undoubtedly caused by the fact that the plant was growing on the low bank of a creek where shade was plentiful and the air was always quite moist making an ideal condition for exceptional growth.

Another group which we found in a small side canyon off Mocking Bird canyon in Riverside County near Arlington, undoubtedly represented this species but among several hundred plants which made up the group, you could pick out plants which were so utterly different as to make one doubtful of the whole group.

Following is the description of *Dudleya lanceolata*: *Dudleya lanceolata* (Nutt.) Britt. & Rose. N. Amer. Fl. 22:43. 1905, Bull. N. Y. Bot. Gard. 3:23, 1903. *Echeveria lanceolata* Nutt. ex Torr. & Gray, Fl. N. Amer. 1:561. 1840. *Cotyledon lanceolata* Benth. & Hook. ex S. Wats. Bot. Calif. 1:211. 1876.

Acaulescent; green or slightly glaucous. Basal leaves numerous, lanceolate, long-acuminate, the outer 10-15 cm. long, 1.5-2 cm. wide; scapes stout, 4-6 dm. tall, their leaves lanceolate from a broad cordate or segittate base, acuminate, the uppermost 1 cm. long or less; cyme 10 cm. broad or less; pedicels stout, 3-8 mm. long; calyx segments broadly ovate, or obtuse, about 4 mm. long; corolla reddish-yellow, 12-16 mm. long.

Type locality: San Diego, Calif.

Distribution: Southern California.

Following are several localities at which we have collected plants which we are satisfied represent *Dudleya lanceolata*: San Juan Canyon, fourteen miles east of San Juan Capistrano; Witches Creek Canyon, seven miles west of Julian; Mint Canyon, one-half mile south of the Forest Service Camp; Tujunga Canyon, three miles above Sunland; Big Tujunga Wash, one mile north of Sunland; San Fernando, near

FIG. 29. *Dudleya lanceolata.*

Basilone Village; Sepulveda Canyon, one mile south of the tunnel; Topango Canyon, three miles back from the ocean. Along the bluffs bordering the road from Lompoc to Surf, one mile back from the ocean; along the ocean bluffs near the town of Cayucas, two miles north of Morro Bay; also in Santa Anita Canyon about eight miles from Corona.

In San Gabriel Canyon out of Azusa and in Fish Canyon just north of Duarte, you find *Dudleya lanceolata* growing closely intermingled with *D. minor* but so far we have not found any indication of any intermediates such as one would expect when plants are so closely associated.

This may possibly be explained by the fact that the flowering periods of the two *species* vary. *Dudleya minor* flowers in the early or middle part of April to early May, while *Dudleya lanceolata* does not flower until after the middle of May at the earliest.

LITERATURE CITED

Britton, N. L. & Rose, J. N. Bulletin New York Botanical Garden, 3:23, 1903.

Britton, N. L. & Rose, J. N. North American Flora, 22:43. 1905.

DECEASED

Within the last few months we have lost the following members of the Society. Each one will be greatly missed.

John Poindexter, Los Angeles, California.
W. D. Mitchell, Sebring, Florida.
Henry C. Shetrone, Columbus, Ohio.
Boyd L. Sloane, Pasadena, California.

ANNOUNCEMENT

The Cactus and Succulent Society of America is happy to announce to its members that the Executive Board and the Librarian have now completed arrangements to loan a certain group of books to the members in good standing, who wish to make use of this privilege. This privilege of borrowing books from the Library of the Society is of necessity, restricted to the members living in the United States only. Members wishing to take advantage of this privilege, can obtain full information and the rules for borrowing, by writing to the Librarian, Mrs. Orva Bokarica, 6014 Piedmont Ave., Los Angeles 42, Calif.

The following list of books are available for loan at this time and we hope to add others as they become available:

Stapelieae, 1933—White & Sloane
Arizona Cacti, 1933—Stockwell & Breazeale
Colorado Cacti, 1940—Boissevain & Davidson
California Cacti, 1935—Baxter
Trees and Shrubs of Mexico—pt. 4 Standley
Cacti for the Amateur—Haselton
Succulents for the Amateur—Brown, White, Sloane and Reynolds
Glossary of Succulent Plant Terms—Marshall & Woods
Cactus Book—Houghton
The Cactus and Its Home—Shreve
Cactus Culture—Schulz
Flowers of the Desert—Day
Cacti and Other Succulents of the Santa Barbara Region—Hoffman & Orpet
Cactus Growing for Beginners—Vera Higgins
Succulent Plants of New and Old World Deserts—Alexander
A Contribution for a Better Understanding of Xerophytic Plants—Marshall
Cacti and Succulents and How to Grow Them—Haselton
Cacti in the Home—Shreve
Personal Tale of a Cactus Collector—Gates

FIG. 30. View of Prof. Juan Balme's private collection in Mexico.

Winter-flowering Crassulas

With the exception of *Crassula coccinea*,[1] few members of this genus are to be found in greenhouses, except in those owned by succulent enthusiasts; yet there are a few species which merit the attention of the general plantsman by their freedom of flowering, and their long-lasting beauty when this stage is reached. When it can be added that they are at their best in the late autumn and winter, there seem many reasons why they should be more generally cultivated.

The species under consideration are not the most succulent members of the genus, but those of a more leafy nature, making their growth and producing their flowers within the current year. Their flowers are small—as is the case with all Crassulas—but they are produced in such profusion as to ensure a showy plant. Propagation is easy, consisting merely of the division of the clumps in the spring, when they may be potted direct into the pots in which they will flower. They may also be increased by cuttings, and in most cases, from leaves; generally, however, it is just a case of dividing the contents of one pot among four or five others.

Cultivation is also simple. The potting soil should consist of one part loam, one part leaf-soil or peat, and half a part of coarse sand or crushed brick. A slight sprinkling of bone-meal may be added, but I never use it. Potting should be only moderately firm and the pots should be adequately crocked to provide good drainage. Water must be given sparingly until roots are abundant and the weather becomes warmer; the plants will then be found to be thirsty subjects.

They should be housed in a cold frame in full sun and they may be placed in the open after the end of May, provided they can be protected from heavy rains. By the end of September, the plants should be moved into a cool house, when they should in some cases be showing signs of flowering. A winter temperature of 40° to 45° F. will be sufficient but, of course, watering must be more carefully carried out then. Indeed, except during bright weather, they are best kept on the dry side, although they must be given some water until they have finished flowering. Ventilation should be given daily when the temperature has reached 50° F.

FIG. 32. Flowering stem of *Crassula lactea* x 0.5
Reprinted from Vol. II CACTUS JOURNAL

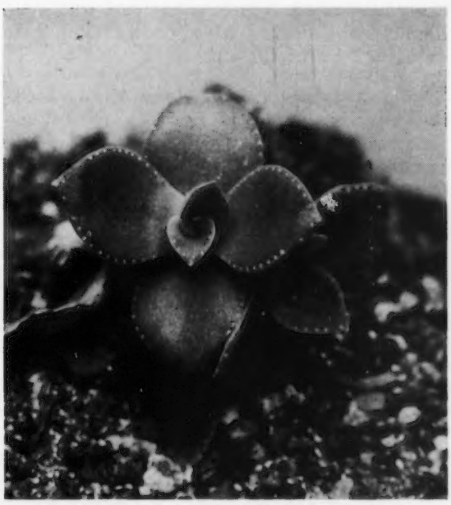

FIG. 31. *Crassula lactea* showing the interesting dots on the leaf margins. Haselton photo.

There are numerous desirable species. *Crassula bolusii* is a low-growing plant only an inch high, the inflorescences of which reach a height of only two inches. The tiny leaves are dark green with reddish spots, and they completely

[1] *Crassula* (*Rochea*) *coccinea*, see *Succulents for the Amateur*, fig. 6.

FIG. 33. *Crassula corymbulosa* is a popular bowl plant because of the reddish coloring of the leaves.

cover the soil, being very attractive even without flowers. The tiny white flowers are produced abundantly and last for many weeks. This species is most attractive when grown in four-inch pots or pans. *Crassula cooperi*[2] is somewhat similar, and is stated by some authorities to be synonymous with *C. bolusii,* but it differs in that it is of laxer growth, has larger leaves—and these of a different color—and the flowers reach twice the height of *C. bolusii.* Similar sized pots are recommended.

Crassula impressa[3] has narrow, dotted, strap-shaped leaves which are two inches long. The branched inflorescence reaches a height of four inches and bears deep red flowers. The leaves of the plant turn a reddish color as the flowers open, and if water is given only in small quantities they will become brilliantly red. Small pots are recommended for this species, which is in flower from September to December.

Crassula lactea is a larger plant with stiff growths of a shrubby nature. The leaves are thick, oval in shape and with a line of white dots near the margin. The flowers are produced in a terminal, branching raceme; they are white in color, up to 1 in. across, and sweetly scented. The flowering period is from December to March. This plant cannot always be divided, but cuttings may be rooted and the old plants repotted annually.

Crassula corymbulosa is a pendent species. The leaves are very thick and succulent, two inches long and almost an inch wide, these forming a rosette in the early stages. The inflorescence is stout, and at once assumes a pendulous habit, being terminated by a corymb of small white flowers. The upper part of the inflorescence develops numerous lateral corymbs, making a fine decorative display. The flowering period is from November to January. After this many rosettes are formed at the base and along the flowering stem. I have found two of these sufficient for a five-inch pot.

NOTE: By E. Brown. Reprinted from *The Gardeners' Chronicle* III, 133: 15. Jan. 1953.

[2] *Crassula cooperi,* see *Unusual Plants,* pl. 90.

[3] *Crassula impressa* (*schmidtii*), see *Succulents for the Amateur,* fig. 152.

MIDWEST CACTUS AND SUCCULENT SOCIETY

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July 17. "Success With Mesembs"
August 21. "The 1955 Convention"
September 18. Picnic at Science Club
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November 20. Turkey Dinner
December 11. Plant Exchange. Election.
January 15, 1956. "Kalanchoes and Bryophyllums"

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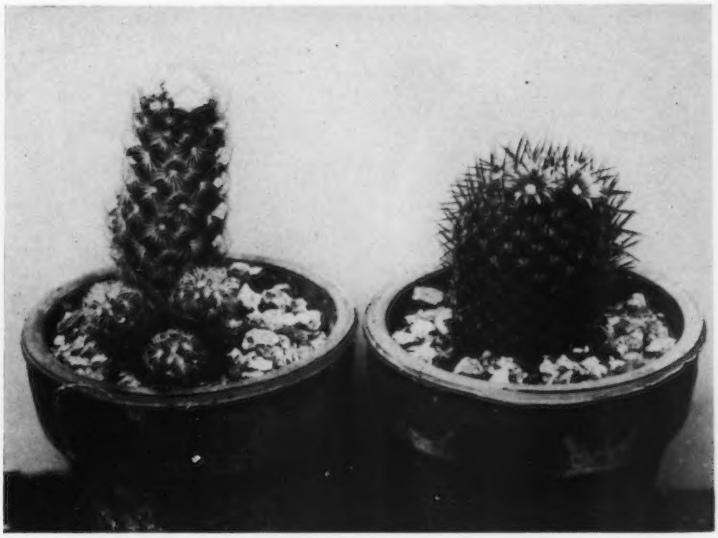


FIG. 34. Two of the earliest flowering Mams. *Mammillaria elongata* (left) and *M. elegans* (right). Both started flowering under glass in January.

Cactuses vs. Cacti

Reprinted from Vol. II, Cactus and Succulent Journal

A trip to Mr. Webster's dictionary will clear up a lot of discussion regarding a topic that us cactus people argue about. We can say "cactuses" if we want to or we can say "cacti" if we want to, and with a little care about the rest of our talk, we will be right.

"Cacti" is easy to write but a little harder to say. Some of us call it *cact-eye,* and that sounds pretty good. Sometimes we get more snooty and say it *cock-tee,* it sounds like a million but is liable to scare away further conversation from our listener. The one that sounds best and isn't quite so uppity is *cac-ti*(t) leaving off the last *t* but keeping the short sound of the *i.* This one compares with the pronunciation of "aunt" that sounds almost like *a-a-aunt* but isn't, if you know what I mean.

"Cactuses" is good old English pluralizing (again if you know what I mean). The seventh grade grammar books used to say "to make the plural form of a noun add "s" to a word ending in anything but "s" and the letters "es" to such a word. Education has progressed rapidly since then but us old-timers might still follow the same rule. And it is a lot easier to say and be sure one is right. Put the accent on the "cac" part and there you are!

Mister Webster says that *cacti* pronounced "cact-eye" is the correct Latin plural for *cactus;* and that *cactuses* is the English form.

Take your choice. If you lisp, for golly's sakes stick to *cacti.* If you are a lawyer, or a person with a tendency to use such words as *non-compos mentos,* or *vice-versa,* or *ne-plus-ultra,* or *habeas corpus,* then go ahead and say *cacti.* It is an old gag for people to try to make their job sound hard, and if they can say *medulla oblongata* instead of *knee-cap* (or whatever it is, you know what I mean), then they can charge you a couple of dollars extra and say it's for the time they spent learning those words.

But then . . . let's be liberal. Let's give a man who only has a couple of these things on his tongue a chance to use them once in a while. Let's let him say *cacti* and not even smile if he says *cock-tee.* It's easy to be big-hearted in such matters.

And as for us, ourselves? If you are a botanist and are used to saying words as *Nopalxochia, Machaerocereus, Epithelantha* (take it slow and easy), *Leuchtenbergia,* or *Echinofossulocactus,* when talking about cactuses, then *cacti* is a pretty good word to use. But if you get stuck on *Opuntia* and *Ferocactus* then maybe you better stay with me on *cactuses.*

Grampa
(Nom de plume, if you get what I mean)

FIG. 35. The coveted Medal of Honor of the Garden Club of America.

WILLIAM HERTRICH HONORED

By JANET WRIGHT

William Hertrich, Curator Emeritus of the Henry E. Huntington Botanical Gardens in San Marino, was the recipient on March 9, in Houston, Texas, of the Medal of Honor given by the Garden Club of America. The award was made at a banquet during the annual national convention of the Garden Club of American in Houston. Mr. Hertrich's is the ninth such award since its inception in 1920, and the first to have been presented since 1949.

Asked to comment on the honor, Mr. Hertrich, obviously moved, remarked with his characteristic modesty, "I thought the award which I received in 1951 from the Massachusetts Horticultural Society was more than ample for my long years of service to horticulture, and this quite overwhelms me."

This year in which the Garden Club of America presents its award to the distinguished horticulturist marks a half century since William Hertrich first came to San Marino and began planning and designing the 200 acre estate of Henry E. Huntington. In the ensuing fifty years he has laid out its extensive desert-plant collections, its oriental garden, its camellia and rose gardens, and the rest of its beautiful display gardens. In 1907 he planted the first commercial grove of avocados in Southern California. During these years he has established a national and international reputation as a horticultural and botanical authority.

Mr. Hertrich's retirement in 1947 left him free to devote more time to his botanical experiments and studies. His work with the camellia experimental gardens is well-known, and his "Camellias in the Huntington Gardens," published last year, has been acclaimed the outstanding modern authority on the camellia. The first of a four-volume work to be published by the Huntington Library deals with the *Camellia japonica.*

In recognition of his outstanding contributions to horticulture, Mr. Hertrich has been elected an honorary member of the following societies, among others: California Horticultural Society, Southern California Horticultural Society, Pasadena Flower Show Association, San Marino Garden Club, California Avocado Association, Cactus and Succulent Society of America, and the Camellia Society of Southern California.

Mr. Hertrich is a well-loved and honored figure in the local horticultural world. His nomination for the Garden Club of America's Medal of Honor was made by the Diggers Club of Pasadena and was seconded by the Pasadena Garden Club and the Santa Barbara and Montecito Garden Club.

* * *

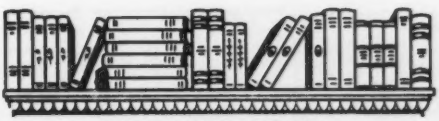
Garden Club of America Awards of Honor, prior to 1955: Charles Sprague Sargent—1920, Mrs. Francis King (Organizer of Farm and Gard. Assoc.)—1923, Massachusetts Hortic. Society on occasion of 100th anniversary—1929, Liberty Hyde Bailey—1931, Mrs. Louise Beebe Wilder—1936, Robert Moses—Park and Highway Commissioner, N. Y. State—1938, John C. Wister—1945, Dr. and Mrs. David Fairchild—1949, William Hertrich—1955.

FIG. 36. *Kalanchoe blossfeldiana* is one of the most satisfactory pot plants—available from most florists.

KALANCHOE x KEWENSIS

The genus *Kalanchoe* is a large one, extremely diverse, and with an extensive range of color. Although a number of the species have little horticultural value, there are a few which have garden merit and may be used for decorative purposes. The best known are probably *K. coccinea** and *K. blossfeldiana* with scarlet flowers, and to a lesser extent, perhaps, *K. schimperiana,* with large white flowers. Two other species are used, particularly in succulent collections, as foliage plants: *K. beharensis* and *K. marmorata.* The hybrid, *K.* x *kewensis,* is at least distinctive in its coloring and has a long flowering period. It is also easily cultivated and vigorous in growth. One of its parents, *K. flammea,* is scarlet in color and was introduced from Somaliland in 1897. It has tongue-shaped, fleshy foliage with crenate margins. The other parents, *K. bentii* (now called *K. teretifolia*), reached Kew [Royal Botanic Gardens, Kew, England] from Southern Arabia and flowered in 1900; it has pure white flowers, borne on an erect stem some three feet in height, and almost cylindrical, fleshy leaves up to six inches in length. In the hybrid the foliage is pinnatifid and some six inches in length. The height of the plant may be three or even four feet, usually unbranched up to the inflorescence. The color of the flowers is bright pink (Horticultural Color Chart, Phlox Pink 625/1). The flowers are carried in large panicles over a long period.—G. W. R. in *Gard. Chron.* III, 136: 185. Nov. 1954.

K. laciniata



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The Flowering Cactus—Raymond Carlson and R. C. and Claire Meyer Proctor. This long-watched for book is now available and every cactus collector will want a copy. There are 115 photographs, 81 of which *are full color.* The full page plates are breath-taking in their brilliancy. The text is written for the layman and includes descriptions of the various groups, chapters on cultivation, photography and distribution. This beautiful book is 9x12 inches, $7.50, postpaid, plus sales tax in California.

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NOW AVAILABLE

The Journal of the Cactus and Succulent Society of Japan is now available for $2 per year. Issued quarterly, mostly in Japanese language, there are always items of interest. For instance in the Jan., 1955, issue, No. 93, there is a list of Euphorbias in Japan. This list is in English and there are 162 species. There is also a list of 18 hybrids (in Japanese) and an article on hybridizing Euphorbias; perhaps one of our Japanese members will send us a translation in English. This Journal also contains six or more interesting pictures. Send your subscription by International Money Order direct to them: Care of Kosobe Flori-Cultural Station of Kyoto University, Kosobe, Takatsuki City, Osaka, Japan.

EXCHANGE COLUMN

Echinocereus blanckii, E. berlandieri, and other Echinocerei in exchange for *E. enneacanthus, E. papillosus, Homalocephala texensis* and *Hamatocactus setispinus* or will pay a reasonable price for the plants I need. I would be pleased to correspond with any member specializing in *Echinocereus.* Marvin Tooley, 4830 Waltham Dr., Corpus Christi, Texas.

SPINE CHATS

LADISLAUS CUTAK

A new *Tavaresia*, remarkable in the genus for the shortness of the corolla tube by comparison with the length of the lobes, has been described by R. A. Dyer in Bothalia (Vol. 6, Part 2, 1954), which is a record of contributions from the National Herbarium, Union of South Africa at Pretoria. The new species was first submitted for identification by Mr. B. Meintjes of Johannesburg in 1943, but at that time it was thought the flower was abnormal and later when another specimen was located and flower proved identical with the original it was earmarked for publication as a new species. *Tavaresia meintjesii* can be described as a tufted dwarf succulent with thick glabrous or very minutely pubescent stems up to 5 inches tall. The stems are characteristically 6 to 8 angled and tuberculate. The flowers appear in sessile cymes, from near the base of the young branches and are about 4 inches long, cream colored within with spots and transverse bands of maroon, and maroon on the margins. It grows in the Transvaal and in vegetative character shows a close similarity to *T. angolensis*.

In the same issue of Bothalia, R. A. Dyer describes a new succulent *Pelargonium* from the Cape Province. He calls it *Pelargonium jacobii* and states that it is closely related to *P. carnosum* from which it is readily distinguished by the entire leaves. The plant is a sparsely branched succulent up to 8 inches tall or 16 inches with the inflorescence. The stem is thick near base and gradually tapers into several blunt branches where the obovate to oblanceolate leaves appear. Its flowers are white and pedicellate.

* * *

Aloe babatiensis is a new species described by Christian and Verdoorn in Bothalia (6: 440, 1954). The aloe was originally collected on the Pole Evans' Central and East African Expedition, September, 1938, but without flowers and the plants refused to come into bloom until 1946 and then again in 1951. The spreading leaves which narrow perceptibly from a broad base are crowded in a rosette at the top of a stem that reaches 20 inches high. The upper surface of the leaves is a dark shining green shading to copper color in the dry season where exposed to sun. The most striking characters about the inflorescence are the large pale green, rather thick bracts, the erect branches crowding the racemes together and the conspicuous sterile bracts below the racemes. The color of the flowers is apricot-orange to salmon-pink with the buds green-tipped.

* * *

Perhaps you are wondering about the progress of my CACTUS GUIDE. The manuscript was accepted, the contract signed, and a promise of publication this month assured. However, there will be a slight delay before the book will finally appear on the market. A good deal of time and thought has been devoted to the study of the manuscript, both by me, the author, and the D. Van Nostrand Company, the potential publisher. We have a mutual objective in wanting to issue a book that will be helpful to the reader and that will sell well. Some revision was needed to conform to the taste of the publisher and this work is now in progress. I am hoping to complete the project this month.

* * *

In the latter part of January an Eastern Airlines skybird winged its way to Florida with me as one of the passengers. The purpose of my trip was to personally contact a number of growers who specialize in aroids. At the Missouri Botanical Garden we are trying to establish a large collection of philodendrons and their intriguing cousins. The aroids are sweeping into popularity by leaps and bounds and the plants lend themselves admirably to modern homes. Although search for aroids consumed most of my time, I want you to know that I did not overlook other attractive plants, such as the succulents, bromels, etc.

Speaking of succulents, Florida's climate does not seem to suit these plants; otherwise, I'm sure, more of them would be cultivated. However, there is no question in my mind that many more species could be grown if a more concerted effort was made. The typical species that do exceptionally well are the torch cacti (Cereus); spurges like *Euphorbia lactea, E. tirucalli* and *E. splendens*; and the kalanchoids, particularly *Bryophyllum daigremontianum, E. tubiflorum* and *B. gastonis bonnieri*. There are others, to be sure, but the above are more commonly found in most gardens. *Bryophyllum gastonis bonnieri* makes vivid splashes of color when planted in mass. At the Parrot Jungle in south Miami one large slope is entirely overgrown with this Madagascan plant. There must be thousands of them and each plant was producing conspicuous chandeliers of reddish blossoms. Imagine the glorious sight it created! This highly succulent plant was also evident at the Fairchild Tropical Garden and at the McKee Jungle Gardens in Vero Beach. It is frequently employed in foundation plantings around Florida homes.

I found a very enthusiastic group of cactophiles in Sarasota who are doing much to promote the use of succulents in plantings. The group is comparatively new, organized in the fall of 1950, but already they have established a rock garden on ground loaned by Mr. W. G. Sparkman which is open to the public on visitors' days.

In Daytona Beach I had the pleasure of addressing an enthusiastic Cape Jessamine Garden Club. In the audience happened to be two fine artists, Mr. and Mrs. Fred Dana Marsh. They were so enthused with my slides that Mrs. Marsh phoned the next morning and invited me to visit their home and studio in Ormond Beach. Mr. Marsh is a well known sculptor and many of his creations are displayed about the house and grounds. I was tickled to see so many succulents used in landscaping the grounds. There were many agaves, spineless opuntias, mottled aloes, yuccas and euphorbias artistically arranged in beds and boxes. Some of these exhibited flowers and I was able to catch the beauty of the surroundings on kodachrome film. I may show some of these at the cactus convention in July.

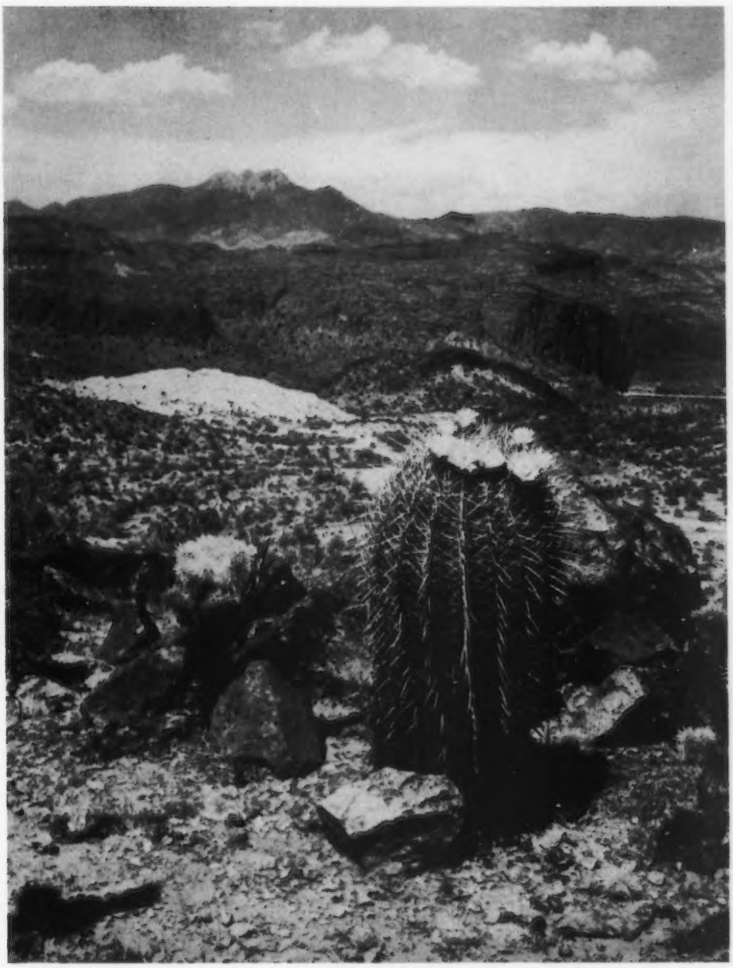

FIG. 37. *Ferocactus acanthodes* in its Arizona habitat—locale for many of the color photograph in "The Flowering Cactus"—Proctor.

BOOK NOTES

THE FLOWERING CACTUS Raymond Carlson, editor; R. C. and Claire M. Proctor, photographs, tech. data. 96 pp. 128 photographs, 81 color. *The Flowering Cactus* is one of the most impressive books to reach the public to date. Within its hard covers is found the most complete collection of color studies of cactus plants ever to appear in a book of this type.

Ralph C. and Claire Meyer Proctor, who make their home in the land of the cactus, did all of the color photography. For years, this couple has stood out—pre-eminent in cactus photography. Not only do these photographers go out in the field, but they also cultivate many of the spiny pets in their yard and home. The technical data accompanying the illustrations is furnished by them. The illustrations alone are worth the price. The color photos are engraved on heavy glossy paper which aids in bringing out the soft, silky texture of the flowers.

Raymond Carlson edited the book and George M. Avery made important sketches which will help the reader to understand these plants.

The thirteen chapters deal with the saguaro, barrel, cholla, pincushion, fishhook, prickly pear, hedgehog, orchid and night-blooming cacti, most of which are found in the Arizona desert. Other fascinating out-of-state members are not overlooked. There is a chapter on cultivation and a most valuable guide to the flowering time of each specific cactus, along with a map.

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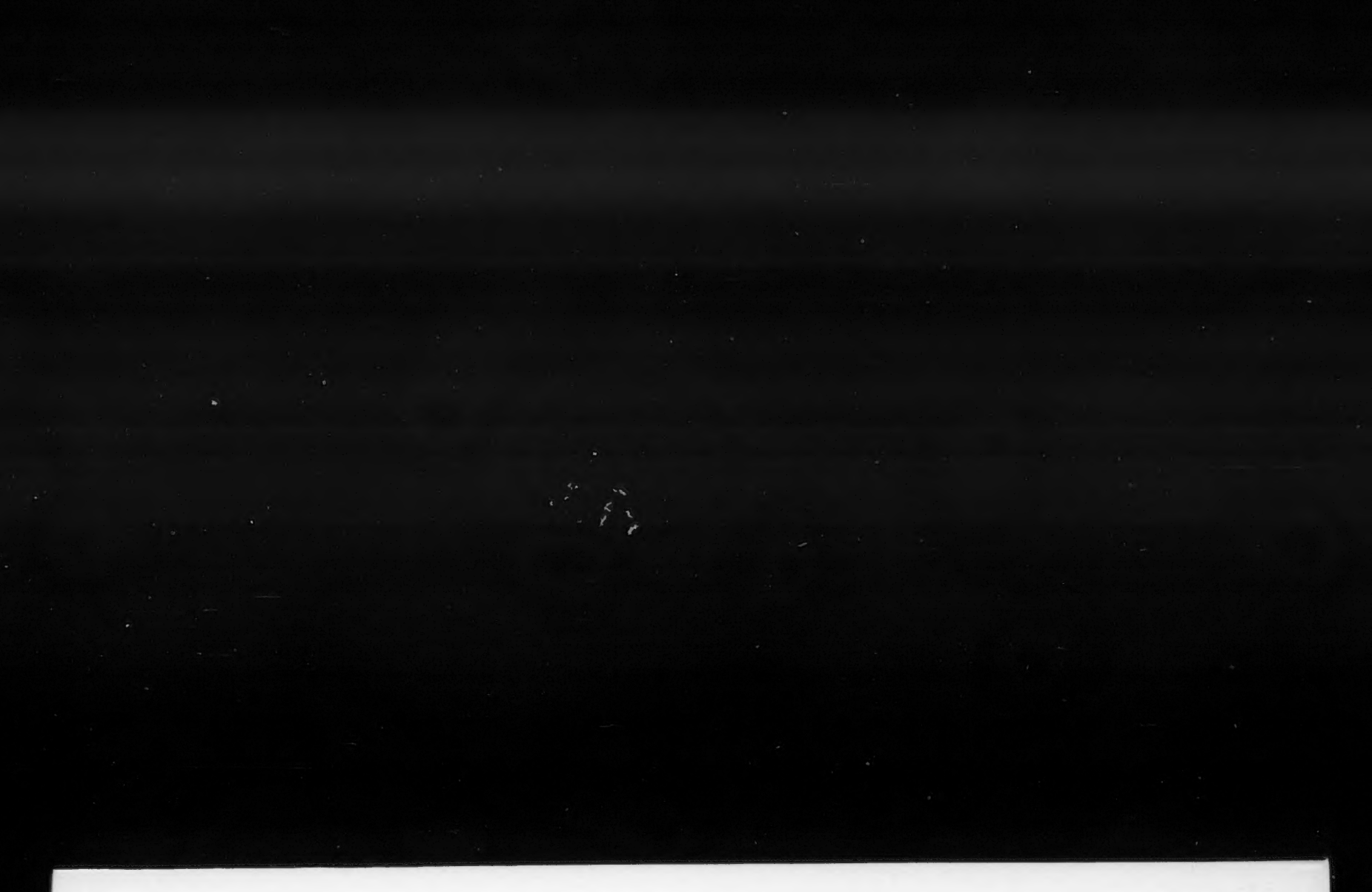
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